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A COMPENDIOUS METHOD

For the RAISING of the
Italian BROCOLI, Spanish CARDOON,
CELERIAC, FINOCHI, and
Other Foreign KITCHEN-VEGETABLES.

As also an
ACCOUNT
OF THE
LA LUCERNE, ST FOYNE, CLOVER,
And other *Grass-Seeds*.

With the Method of *Burning of Clay*, for the Improvement of Land, lately communicated to the Author by a Person of Worth and Honour of *North-Britain*, who has greatly experienced the same. By which it appears, that *Burnt Clay* is not only the cheapest but the best Discovery for the Improvement of Land (especially that which is cold and poor) ever yet produced.

The Fifth Edition.

To which is added,
An ACCOUNT of the Success of the *Burning of Clay*, and of Mr *Liveings's Manure*; with several considerable Additions from the last Year's Experience.

By STEPHEN SWITZER, Author of the *Practical Fruit and Kitchen-Gardener*.

*Quare agite, ô, proprios generatim discite cultus,
Agricolæ, — — — VIRG.*

L O N D O N :

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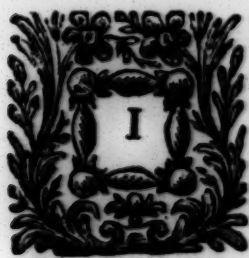




T H E

P R E F A C E

To the First *EDITION*.



I is not above a Week or ten Days since that, at the Desire of several Gentlemen, who do me the Favour to deal with me in Garden Seeds, I have set about drawing up this short Account; the good-natur'd Reader will not then wonder, that from so hasty a Birth this Piece comes out misshapen, decrepid, and lame, and not able to make its Way into the World; and indeed all that I can say in its behalf is, that most of the Particulars herein contained are the real Result of Practice and Experience, and the rest the most reasonable and and parallel Deductions I could possibly make therefrom.

I have not taken upon me to usurp the Office of the Cook, in setting down all that might be as to the dressing the several Herbs following in this Account, that not being my Province; but whoever has a good Cook, or reads the Books which are published in that Art, will soon find to how many useful Purposes the following

following short Collection of Herbs are applied; how much these and many other Plants that grow in a Garden contribute to the making a good Dinner; how much, if moderately us'd, to Life and Pleasure itself.

I have, in the first Place, begun with BROCOLI to be boil'd, a Sallad that has been some Time among us; but our not knowing how to manage it, has brought a kind of Disreputation upon it, though there have been, and are still, many Advocates for it, and, if well managed, is, in my humble Opinion, next to the true Asparagus, the best boil'd Winter Sallad we have, at least much better than any other kind of Sprouts that grow, and is in Season at such a Time, when nothing else equal to it can be got.

The CELERiac is the next Herb I have endeavoured to promote the Use of: Those who have eat it abroad say, that it is much better than Common Celery, inasmuch, as it grows thicker and smaller, and eats much shorter, and has a more exalted Taste than that has. I must confess I don't know it by that Name, nor do any of the Seedsmen that I have met with at this End of the Town; but a Gentleman in the City, who has long been a great Importer of all curious Seeds, (and of whom I have bought my Seeds) has it from Alexandria itself by that very Name; and if it be no other than what is commonly known by the Name of the Italian Celery, it is, in my humble Opinion, much to be preferr'd to the common Sort.

The Spanish CARDOON is the next Plant I have recommended to the Cultivation of the Curious, because, I think when it is well whiten'd, it eats much better in Soups than Celery does; and being stew'd in a Pan, eats a great deal shorter, perfectly melting in a Man's Mouth;

Mouth; and besides all, may be continued under Glasses, or in a Green-House, all the Winter, and is not so apt to run to Seed, or grow tough and sticky in the Spring, as Celery does.

The FINOCHI, or Italian Fennel, is the next Herb I recommend to be propagated: It has been but a few Years amongst us, and really but in the Hands of a very few; the Right Honourable the Earl of Peterborough being almost the only one that has brought it over, or knows its Virtues and Uses; but it is a Plant of such wonderful Properties in refining the Blood, exhilarating the Spirits, and strengthening the Stomach, that I am sanguine enough to believe, that were it possible that there were Virtues in any one Plant in Nature capable of introducing Immortality among Mankind, this would do it.

Something more has been added as to ALISANDER, MUSHROOM, &c. but for that I refer my Reader to the Treatise itself, and before I go any farther, shall answer an Objection which I find is like to be made against this Pamphlet by the Ludicrous and Ill-natur'd, who will perhaps ask why there is such a Pother about a little Brocoli, and a few other Plants well enough known in England long before this. But I answer, that if they are known, it is only but to a few; and the making the Knowledge of it more universal amongst Mankind, as it will I hope contribute more to their Diversion, Health, &c. than all the wise Conundrums of those pretended Wits.

*But that this short Treatise may not come into the World unattended with something which is very solidly useful, I have added in the last Part of it the best Methods that I know of for raising of Grass-Seeds, which has been of great Use and Advantage to these Kingdoms, and rais'd the Value of Estates more
than*

than any one Piece of Husbandry in Use in England, and have endeavoured to make the Method of raising that valuable Grass the La Lucerne more publickly plain.

The last Thing I have attempted, is the making the Knowledge and Use of burning of Clay, which may be justly deemed the cheapest and most useful Improvement that this or any other Age has found out, and by which Gentlemen, Farmers, and others of all kinds, may improve their Estates with much more Ease, and cheaper, than they have before; for if Fermentation be, as I think it undoubtedly is, the Axis on which the Scale, or rather the whole Wheel or Circle of Nature turns, both in the Vegetable as well as Animal System, no wonder that the Coldness of our Soil, the Density of our Air, and which is more than all, and the great Calamity of our Climate, the great Rains which fall in the Spring, and which were never more calamitous than they have been this, then, I say, surely those auxiliary Dressings and Improvements, which I have mentioned in the later Part of this Treatise, must needs be of the greatest Use to all Husbandmen and Farmers.

I own I have wrote a great deal, though I thank God, and the kind Disposition of the present Age, with some kind of Satisfaction and Success; and have only this to add, the supposing this little Pamphlet meets with Approbation, I shall only trouble the World, after my System of * Hydrostaticks is publish'd, once more; and that shall be (if it please God to give me Life and Health to finish it) with the shortest, but most useful Compendium that has been yet published on these Subjects, which will be a compleat Supplement to this and all other Writings that I have published.

* This Book is now publish'd.

And I return those Gentlemen my hearty Thanks for the Favour they have done me in buying their Seeds of me this Year, assuring them that if, through the Shortness of the Time that I have had in that Undertaking, and the Haste and Hurry I am in, in that and other Business, there be any Mistake made, (tho' I know of none) I will make them amends by selling better, if I live till another Year; and they may depend on those Seeds to which I shall then prefix an Asterism, to be the very best Seeds of their Kind that are.

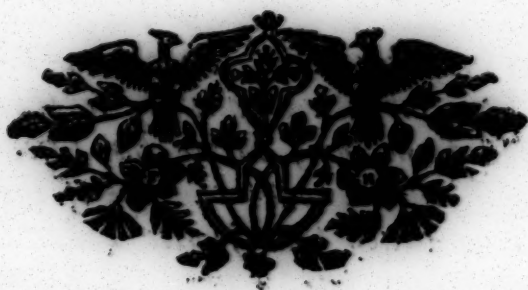
All that I have to add, is concerning an Affair of my own, which will undoubtedly be made use of now I appear in so publick a Place; and that is, to clear myself from a base unjust Aspersions cast upon me by a great Man, some few Years ago deceased, as if I did not perform my Work, but imbezelled several hundred Pounds of his Money; the Falsity of which is visible, and speaks for itself, in that I never went out of the Way, (tho' some of my Enemies falsely said I did) and that the said great Man has since paid all that Money.

The Story is too long to tell in this Place, but the Injustice and Injury I have suffered by it, is such, that perhaps it is not in the Power (at least I doubt it will not be in the Will) of the Relations that great Person has left behind him, to make me Reparation; and as I have submitted patiently to the barbarous Usage I had from him, during his Life, they must excuse me, if before I take my leave of the World by writing, I do myself that Justice I dar'd not then, though it will bear harder upon his Memory than I am willing it should.

I cannot also but in this Place take Notice of some very ill Will conceived against me by some of my Brother Seedsmen, on Account, (as I suppose, of my being a Gardener, and not a Seedsman bred) that I should set up a Seed-Shop in Opposition, as they say,

to them; and that I have in the Introduction to my Seed-Bill reflected upon them. In the first Place I take it, that I have as good a Title to exercise that Employ, as any of them have; and I can only say in answer to them, That 'tis much easier for a Gardener to make a Seedsman, then 'tis for a Seedsman to make a Gardener; and as to the last, that I made Reflection on no particular Person, but against the Errors in general which are to be found in their Lists, paying all due Respect to such of that Trade who have been long in it, and are well versed therein. Of this Number is Mr Garroway in Fleet-Street, Mr Turner in the Strand, and Mr Sears at the Black-Boy in Pall-Mall; the rest of that Trade (except it be a noted Importer, or two) I have but little Acquaintance with, and only know them by their printed Bills, and the Imperfections with which they abound.

April, 1728.



A more
2. 11. 11



A more Particular

METHOD

For the RAISING

Italian Brocoli, Spanish Cardoon, Celeriac, Finochi, and other foreign Kitchen-PLANTS ; So as to make them more useful Dishes than hitherto they have been.



BROCOLI (not *Brocula*, as by some erroneously wrote) is, according to Mr. Evelyn in his *Acetaria*, the *Helmerida*, or rather (as *Delacampius*, in his Edition, will have it) the *Ilmerida* of Pliny, a Kind of *Italian Kele*, or *Colewort*, which grows on the *Sea-Coasts* about *Naples*, and other Places in *Italy*; from whence the best Seed is yearly exported, that which is sowed in *England* being little worth.

Since the writing of this Article in the first and second Edition, I have met with a Person who was for some Years Gardener to the *British Embassy* at *Constantinople*, and came over with Mr *Wortley Mountague*, to whom he is now Gardener at *Twickenham*, who assures me it is a Mi-
Seeds last above a Year good in England.

stake to say, that *Brocoli* Seeds will not do well above one Year; having sown it for 5 or 6 Years successively, in his Master's Garden, and it holds the same as it was at first, and I have some of his Plants now growing by me, which are like to prove well; from whence this Conjecture of its not doing well above one Year arose, I cannot tell: The greatest Difficulty that attends this Affair in the getting Seeds from abroad, is, the great Cheat that those People, who gather it on the Sea-side, put upon the Merchant, and consequently upon us here, has been a great Hindrance to the using it for this Year: For though I saw the Bag just brought from the Water-side, and mark'd with an *Italian* Mark and Character, and saw the Bill of Parcels, &c. in the Importer's own Hands, yet when it came up, it was nothing else but Turneps; so little Faith is to be found amongst those Collectors of Seeds, who no doubt think it no Sin to cheat Hereticks. But in order to obviate this, I shall for the future offer no Seeds to sale which come from abroad, (especially from thence) but what I try first in my own Garden.

*The several
Kinds of Bro-
coli.*

There are three several Kinds that I have had growing in my Garden near *Vaux-Hall*, these two Years, viz. That with small whitish-yellow Flowers, like the Collyflower; others like the common Sprouts and flowers of a Colewort; and a third, which is, in my humble Opinion, the best of all, with purple Flowers; all which come mix'd together, none of them being as yet (at least that I know of) ever sowed separate.

*Season of sow-
ing it;*

The Seed is in general to be sown at the same Season; and ordered, during the first four Months of its Growth, like the Savoy; but for

for the particular Method of Cultivation, the following Rules are to be observed.

In the first place, the Seed is to be sown in as good a Soil, and in the same Manner as Collyflowers, Savoy, and other Cabbages are, about the latter End of *April*, or Beginning of *May*: For whoever defers it till Midsummer, is in the wrong; because the Stems will not be strong enough, before the Winter comes in to produce that number of Sprouts, which otherwise they would.

In April or May.

The next thing to be done, is the transplanting them out of the Seed, into the Nursery-Bed, in the same Manner as all other Plants of this Kind are, in about a Fortnight or three Weeks after they are sown, and watering them in dry Weather, as Occasion shall require; and sometimes about the latter End of *June* or Beginning of *July*. When you perceive the Plants are stocky, and strong enough, they are to be transplanted at some two or three Foot asunder, on round Hills, like Hop-Hills, in a warm well-sheltered Place; for I find even in my Garden, which lies so near *London*, that our Winters are a little too severe for it, several of the green Tops and Flowers being so nipp'd and pinch'd thereby, that they have rotted and decayed away. The Soil wherein they are planted should be also very good and full of Salts; since it is in the Shortness and Juiciness of the Sprouts that the Goodness of *Brocoli* consists.

Transplanting the Brocoli.

During its being planted thus out, it will form a Head like the common Colewort, some of which Heads (about a Fortnight before *Michaelmas*) must be entirely cut off, about a Foot and a half,

Pruning the Brocoli.

a half, or two Foot above Ground, from the Stem of which, those Sprouts proceed which are afterwards to be boiled and eat as Asparagus itself, and therefore by some called *Italian Asparagus*; but I would not advise the heading your Plantation altogether at one time; but divide it into three Parts; one Part whereof is to be cut then, the other Part a Month after that, and the last about a Fortnight or three Weeks before *Christmas*; by which means there will be a continued Succession of the Sprouts, from about a Month before *Christmas* to our *Lady-Day*.

Dressing the Brocoli. I should have noted, that as soon as the Heads are cut off, the Gardener should apply some Sea-Sand or Cole-Ashes, or, which is as good, or better, than either of them, (on Account of its fiery falacious Quality) some Pigeons Dung, in a Pan or Hollow made round the Root; and, if the Weather is dry, they ought to be well watered with Pond Water.

More Observations in Relation to Brocoli. If your *Brocoli* succeeds well, and likes its Soil, it will form a very fine Head, full of Sprouts, by *Michaelmas*, as it has done this Year with me; these Sprouts may be entirely cut off and eat, or given to your Swine, for they will sprout out and shoot again before *Christmas*; or you may preserve some of the top small Shoots till the Frosts come in, at which Time they will be in their greatest Perfection; where note, that even your large Shoots which came out before, may be cut off, and the outside tough Part peel'd with a fine Knife before they are boiled, only using 6 or 8 Inches of the Top.

Another great Reason why I advise the heading of the *Br coli* at several Times is, because the Sprouts will otherwise grow hard and tough; they

they should therefore on that Account, not only be headed at different Times, but the Sprouts (some of which will come on faster than others) be gathered whilst they are young, not above six or eight Inches long, before they come to flower, and about the Bigness of a Man's little Finger at most; and then it is, I think, an excellent Dish, at least much better than any other kind of Sprouts.

To compleat this Account, and to make the raising of *Brocoli* more perfect. If you have a mind to have a continual Succession of *Brocoli*, quite to our *Lady-Day*; besides the Methods of heading at different Times before mentioned, you may sow more Plants in the latter End of *May*, or Beginning of *June*; and again, the latter End of *June* or Beginning of *July*; but then you must plant them out in the richest warmest Soil you can, and by no means in wet Clay Land, where they won't do; these Plants standing under some Reed-Hedge, and on Hills, may, by the Application of Cole-Ashes, long Dung, &c. be headed and made to sprout again, during the whole Months of *March* and *April*; after which Time, Asparagus, and other Vegetables, come in, which are undoubted Rivals of the *Brocoli*.

*Other Times
and Methods of
managing it.*

The *CARDON*, generally called the *Spanish Cardoon*, because it is very much used in that Country, the best Seeds of which being imported from *Italy*, is, by Botanists called *Carduus Esculentus*, or *Eating Thistle*, a kind of wild Artichoke, the Seed being formed in a Head, not much unlike the Head of that useful Plant.

*Of the Spanish
Cardoon.*

For the Form of the Seed, Raising, and Culture, of the *Cardoon*, take the following Account, being very near the same which was sometime
since

since published in my *Practical Kitchen-Gardener*, pag. 160. which I repeat here, because that Book may not have fallen into the Hands of all that may buy this Pamphlet.

The Seed is of an oval Form, and about the Bigness of a Wheat-Grain, of a very dark-green or blackish Colour, marked with black Streaks from one end to the other; the first Crop of which, is sown about the Middle of *April*, and the other at the Beginning or Middle of *May*.

Some there are, who sow them on Beds well prepared with Dung rotted to Mold, or on Hot-Beds when the Heat is going off; and after that plant them out into Trenches or Pits, as they do Celery; but the *French*, as Mr. *De la Quintinye* tells us, sow the Seed immediately in Pits, a full Foot wide, and six Inches deep, filled with good Mold, and in Beds made four or five Foot wide, in order to place in them two Ranks of those little Trenches or Pits, chequer-wise: They put five or six Seeds in every Hole, but with an Intention to let only two or three of them grow, if they all come up, taking away those that are over and above that Number, to supply those Places where perhaps none came up, or any other Vacancies.

*Manner or
Method of
sowing.*

But it is good to have some sown on a Hot-Bed, or on some Bed where the Heat is expiring, as before; these being covered with Pieces of old Mats or Straw, should be opened in fifteen or twenty Days, to see if they sprout; if not, you may conclude the Seed is bad, and so ought to sow more. The Seeds of the first sowing are generally three Weeks, and the last fifteen Days, in coming up; but must not be sown

sown before the latter End of *April*, or Beginning of *May*, being apt to grow big, and run to Seed in *August* and *September*, and then they are not good; for which Reason great Care must be taken to water them, because that will hinder them from seeding; and towards the latter End of *October*, if you have a mind to whiten them, you take the Advantage of some dry Day, to tie up all their Leaves together with Bands made of Straw, or long Litter, well twisted about them, so that the Air may not penetrate nor come at them, except it be at the very Top, which is to be left open.

Instead of earthing them up, as you do Celery, you are to apply long Horse-Dung to whiten them.

These Plants thus tied up and covered, will whiten in about fifteen Days, or three Weeks, and grow fit to eat. Those who make use of them to any Purpose, continue tying them up, and covering them, till the Winter approaches, and then take them up, and transplant them into the Green-House, or Cellar, (as Collyflowers are served) to have them all the Winter; some of them are good to transplant in the naked Earth in the following Spring, to seed in *June* and *July*, or may, when cut down, be left to spring, and be whitened again the succeeding Summer.

What I have to add to this Account is, concerning the Dressing and Eating of them.

The *French* serve them up, (*a la Poverade*) with Oil and Pepper; and there are a great many Gentlemen that like to eat them thus raw, being, as they say, preferable to Celery.

*Dressing the
Cardoon.*

Besides the Uses the *French* make of the *Cardoon*, in eating it raw, (as they do likewise in *Spain* and *Italy*, from whence the Seed comes) our *English* Cooks stew it in a Pan, as they do

C

Celery,

Celery, finding it to be much better that Way than Celery is, because it eats much shorter; and does as it were, melt in the Mouth, at the same Time that the Celery eats tough and sticky.

*Farther Instr-
ctions about
dressing the
Cardoon.*

An eminent Cook tells me, that the *Cardoon* ought to be blancht, which is an Infusing in warm Water for half an Hour or an Hour, whereby the Bitterness that is natural to the *Cardoon*, will by that means be taken off, and then they may be stewed with a little Butter. &c. though my Instructor tells me, that they stew well with a little Suet.

Of Celeriac. The CELERIAC is a fine Kind of Celery, which is in great Esteem about *Naples*; but the Seed is imported to us from *Alexandria*. It is undoubtedly of the *Petroseline* Family, the Seed being so exactly like our common Celery, that it is not to be distinguished from it.

I cannot say that I ever saw the Plant, except it be what we have commonly had under the Name of the *Italian Celery*; but as it has been recommended to me by some very curious and ingenious Gentlemen, I have procured a good deal of it from a Person who had it directly from *Alexandria*; and should it be no other than the *Italian Celery* just mentioned, it would be a useful Plant, it producing a much stronger Root, and consequently a greater Number of Shoots, or Leaves, than our common Celery; and they eat, in my Opinion, shorter and not so tough nor sticky as the Celery does.

I need not set down the various Uses of these Plants; nor much of the Manner of raising and whitening of them, it being so like that of the common Sort; but in order to prevent (as much

as possible) the piping or running to Seed of all these kinds, they cannot be too often transplanted, or dug about, even though they are put down again in the same Place where you take them up.

To make this short Account of the *Celeriac* more perfect, I shall insert a Letter I have, since the writing of this Pamphlet, received from a very ingenious Person in the *North*, who has the Care of some considerable Gardens belonging to a Noble Lord, very well known amongst Architects, I mean the Right Honourable the Earl of *Burlington*; which take as follows:

Lansborough,
July 13 1728.

SIR,

HAVING read the second Edition of raising Brocoli, *Celeriac*, &c. and the Description of that good Plant which you suppose to be the Italian-Celery, (though very different from it) I presume to send you this Account of it. The *Celeriac* is a low dwarf Plant, in Leaf somewhat like to common Celery, but much smaller, and the Root almost bulbous, or rather knobbed, and about the Size of a large Apple or small Turnep; and therein greatly differs from either the Italian or common Celery: Besides, it is not so apt to pipe (as we term it) as those other Sorts before mentioned do, which being a peculiar Property of this Kind, makes it so very valuable to every one that has it.

It may be sown at any time in March or April, on a hot Bed, and from thence planted directly in Trenches, (not deep but almost at the Top of the Ground, because being a short Plant the burying of it so deep as you do common Celery is needless) by drawing out the largest first, and so on to a second and third Size one after another; and then you may

earth them up, as you do common Celery, about a Month before you want it.

I hope, Sir, you will excuse the Freedom I take in giving you my Opinion, having always had a Respect for your Endeavours in Husbandry and Gardening, ever since you commenc'd an Author. Your Introduction to and manner of handling those beloved Subjects, (the Sale of which I have endeavoured to promote) is in great Esteem with me; being (as I think) the most useful of any that have been wrote on these useful Subjects.

If on any Subject, you shall hereafter revise or write farther upon, any Communication of mine, will be useful or serviceable to you, I shall be very ready to do it. I heartily wish you Success in whatever you undertake, as it tends to a publick Good; And am,

Yours, &c.

THOMAS KNOWLTON.

Besides the uses of the Celeriac whitened in Salads, for which purpose it excells both the common and large *Italian Celery*, being more crisp and short, and less subject to run to Seed; the Bulb or Root being near the shape and size of a small Turnep, it is exceeding good in Soups and Potage, the outside being a little pared off; a good Aromatique, and very wholesome, which coming in, in a cold Season, is then of the greatest Use.

Of the Finochi. The FINOCHI, or *Italian Fennel*, is also a Dish in high Esteem in *Italy*, from whence it has been brought to *England* amongst other Seeds, by that curious Nobleman and Gardener, the Right Honourable the Earl of *Peterborough*,
in

in whose Garden, at *Parson's-Green*, it is cultivated with great Success.

There are several Kinds of it, but that which is the lowest and most bushy is the best.

It may be sown at almost any Time of the Year, but *May* is the chief Season: Though, if you have the Convenience of a Green-House, or of Frames, which are generally disused in Winter, you may sow it the latter End of *July*, or Beginning of *August*, and then it will afford you a most excellent Dish (when housed) all the Winter.

*Time and
Manner of
sowing it.*

There is no more Trouble in the sowing and raising of it, than there is in common Fennel or Celery; but the Method of blanching or whitening, as practised by that Noble Lord, is somewhat different.

After the Seed is come up in the Nursery-Bed, and the Plants are strong enough to plant out, you are to set them at eighteen Inches Distance, or more, that you may commodiously come about them, to earth them up: They will want to be watered several Times, as the Heat of the Season requires, in order to keep them from seeding, and to make them grow gross and large; but the greatest Care is in the blanching them. A Nobleman, very curious in Gardening, tells me, he plants his *Finochi* Seeds in strait Lines, at about ten or twelve Inches asunder; by which means it has room to grow large, and be whitened with the greater Ease.

Of the Planting out of Finochi.

After it is tied up, as you do Celery, you are to get the finest Virgin-Mold, or Sandy Loam, you can; for dungy Earth is not only subject to make it cankerous, but also to taste dungy and strong, (which, by the way, is a good Caution in

in the earthing up of *Celeriac*, common Celery, &c.) with which Virgin-Mold you are to earth up your Fennel; and as soon as it is whitened you may eat it.

When you come to eat it, you are to cut off the Fangs, or long Roots, of the Fennel, as well as the fibrous Parts, preserving the Knob with great Care; then you are to pare off all the Outside, both of the Root and Leaves, leaving only the Heart, and knobbed Root of it, in the Nature of a Pyramid.

*Additions to
this Account.*

Since the second Edition of this Pamphlet came out, I find Gentlemen differ as to the Method of eating of *Finochi*; some chuse to eat it green, others white; all which must be left to every particular Person's Option: But if it be to be whitened, you cannot be too careful in tying it up, and putting the driest, healthiest, cleanest Mold, or Sand, you can, for this Year's Experience tells me, it is otherwise apt to rot in the inside.

I also find, that the sowing of the *Finochi* in May is too soon for a general Winter-Crop, it being very apt to run to Seed; it is a Plant which to me seems not very proper to move; and should be sown in Trenches, as *Cardoon* is, because by that means it may be blanched the better.

The last year's Experience, and the Observations of a Noble Lord, who has raised a great deal of *Finochi* for several Years past, convinces me, that it is better to plant the Seeds of the *Finochi* in Trenches prepared as for Celery, at about ten or twelve Inches asunder, three Seeds in a place, where they are to remain till they are shot up two or three Inches above Ground; and then the two weakest Plants are to be pulled away, and the other not to be moved but blanched, for as the *Finochi* makes only a down right
Tap-

Tap-Root, the transplanting it is not so useful as some conjecture. An Ingenious Gentleman of *Brompton* has for several Years past preserved it all the Year, even during the severest Frosts.

I think no body can object to the raising of this Plant at several Seasons; and, if possible, in all the Months of the Year, by sowing the Seed under Frames, and keeping the Plants earthed up, successively one Crop under another. Sure I am, that there is not in the whole Compass of Nature (amongst Plants which are used to be eat) a more noble Aromatick, a greater Reviver of the Spirits, nor a greater Sweetner of the Blood, than the *Finochi* is; nor is there any Plant that can contribute to the Preservation and Prolonging of Life more than the *Finochi* will.

It is generally, by the *Italians*, eat with Pepper, Oil, and Vinegar, as other Sallads are; but the Noble Lord, of whom mention has been just now made, eats it with Salt only.

*The Manner of
eating Fino-
chi.*

Besides the manner of eating it raw, the *Italians* make a fine Water of it, called *Finocchio*, which is very wholesome, and in great Esteem, and which they transport to *England*.

I think it proper to advise the sowing and covering it thinly in Drills, as Pease, but by no means so deep; because it is a Plant which, making but few Fibres, delights not in Removal; so by sowing it in Drills, it may be the better earthed when you desire to whiten it. This Plant, if used before it is too old and sticky, and eat in a Morning, or indeed at any Time of the Day, with Bread and Butter, Oil and a little Vinegar, as you do Celery, is (I humbly conceive) one of the wholesomest Sallads in the World.

The

Of the Mush-
room.

The MUSHROOM, being a Dish of that Delicacy, as it is generally esteemed, requires I should say something of it, in Addition to what I have already mentioned in my *Practical Kitchen-Gardener*, my Predecessor, Mr Price, had a Quantity of the Spawn, which was sent him from *France*, part of which I have now propogating by me, having disposed of the rest.

Matbiolus, and other Authors of Antiquity, give a long Account of the raising of Mushrooms, from a certain petrified Stone they find about *Naples*; and many Experiments have been made, at least related, by my Lord Bacon, and others in *England*. But our best Way now is from the Fibres and Buttons, which are dug up out of the Ground in the Fairy-Dances; or imported from abroad, and kept dry in Bags.

The *French* Spawn is in great Request amongst Mushroom Raisers; but there is one kind in that Part of *Yorkshire*, which they call *Craven*, of which I have heretofore made mention, which I am informed much excels it; inasmuch as Mr Ray, in his *History of Plants*, (*sub titulo Fungi*) tells us, it boils as white as a Curd; and I have heard from a Gentleman, who has been a Resident in that Country, that about *York* itself they have a kind of Mushroom, which pickles as white as Snow; so that if one could but produce the Spawn from thence, I do not see why it may not excel even the *French* Spawn itself.

The Account of this kind of Spawn, I find in the Transactions of the *Royal Society*, as given by Dr Lister, to grow in the Woods of *Marten* in *Pinnomoor*, in that Part of *Yorkshire* called *Craven*, and have sent to my Friend Mr Knowlton, who favoured me with the Letter concerning *Celeriac*,

leriac, just now recited, to see if I can procure any Spawn of it.

The greatest Difficulty is in raising it ; for tho' you take all the Precautions that have been delivered down by myself and others in Books, the Mushroom will not be compelled by any Art we are Masters of, to come up at our immediate Desire, or when we please ; but when we have made all the Preparations we can, we are obliged to wait Nature's own Leisure.

And the more eager our Wishes are, the farther off one seems to be from producing this valuable Excrescence. A Gentleman has often told me, and I find it by Experience myself, that during my Attention to see them grow, myself as well as my Friend, were always disappointed ; but upon going a Journey, or taking no Heed at all, then they grew, as it were, of themselves.

When you take up the Spawn of the Mushroom, either on the Downs or in a Garden, in order to transport it, you must do it in as dry Weather as you can, putting it into a Bag, and if you do not plant it immediately hang it up in a Place moderately dry ; for if it be moist (as in a Cellar, &c.) then it will be apt to sprout, which spoils the growth of the Spawn when you plant it.

There is no doubt to be made, if you would plant the spawn of Mushrooms in Earth, in a moist Cellar, they would grow, (but how wholesome they would be I cannot determine) for I have been informed by my ingenious Friend Mr *Bradley*, that some time since when he had Occasion to read Lectures on Plants, which he did weekly, the Spawn and Button of the Mushroom had visibly swelled and increased, being laid in the Cellar only. In my opinion, therefore,

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one of the best Ways of raising Mushrooms would be under an Awning, or Covering, like that in which we draw the dry Stems of Oranges which come from *Genoa*, keeping the Extrems either of Heat or Wet from them: Yet that this Awning being open at both Ends may admit of a due Perspiration or Passage of Air thro' it, taking the Awning away whenever the Dews, which are the only Advantage the Mushroom has, fall. Another way might be, by making a Straw Cover, like that I have directed for the *Alisander* in my *Kitchen-Gardener*.

To finish this Account of the raising Mushrooms, I add a Receipt, I some time since received from a *French* Gentleman, which he says is much used in *France* when they are destitute of Spawn; which take in his own Words:

In the first week in *August*, take a good quantity of long dry Horse Dung, as free from the Buttons or Dinging of the Horse, and as strawy as you can get it; wet it, and work it, turning it twice a Week, until the middle of the next Month following; then make your Bed two foot and a half or three foot wide at Bottom, and two Foot high, working it well, and letting it lie about ten or twelve Days, or a Fortnight at most; then put as much more on it of the same stuff, working it well, and drawing it up in the shape of the Ridge of a House, and let it lie as long as before; then search into some old Dung-hill, and you will find some mouldy Cakes of Dung that will smell like Mushrooms, take up those Cakes and break them into Peices as big as your Fist, and then thrust them into your new prepared Bed, at a Foot distance from one another; then cover your Bed two Inches thick with fresh Mould, and again with long dry Straw to keep

keep it from Rain, which is the Bane of all Mushrooms, and in *January* and all the following Spring, as well as the Autumn following, you will have Mushrooms enough.

To the whitened and other Sallads before recited, which are the best that the Garden produces, give me leave to add that of whitening or blanching *Sweet Chervil* and *Parsley*; both of which, when whitened, are very extraordinary Sallads, being useful either in Soops, or to eat raw, as any of the Winter Sallads are; the Strength of the one being abated by whitening, as the Coarseness of the other is raised thereby.

*Of white
Chervil.*

When you have a mind to whiten these two Herbs, you must sow them in the richest Land you have, that they may grow as gross as possible; and the Time of Sowing should be about the middle or latter End of *June*, that they may get Strength and grow large enough, before Winter comes in, to whiten.

They will whiten with any Sort of Mold, but that which is of the Virgin-kind, and inclinable to Sand, is, in this, (as well as all other Herbs to be whitened) the best; nor is there any Difference in the Care and Culture of it; for being once tied up, and earthed when the Weather is pretty fine and dry, to prevent their rotting, they will be blanched and fit to eat in twenty Days, or thereabouts; and are of the Number of the highest Aromatics, as well as Diureticks, that Season produces. The common Celery (which is the only Fault of it) being too apt, without often removing, watering, &c. to run to Seed, and so not to be had late, *i. e.* after *Christmas*, for this Purpose.

Of the Ali-
fander.

The last Sallad which I shall produce, is the ALISANDER, a kind of Plant, the Raifing of which is not much known in *England*, nor is the Seed (as I know of) to be had here: It is often called the *Macedonian Parsley*, being undoubtedly of the *Petroseline* Family; and its Excellence is, that you may have it clean, unseeded, and unsticky, when the Celery is piped and gone. The Method of raising it I have set down at large in my *Practical Kitchen Gardener*; but as that Book may not be in every Hand, I shall recapitulate what is there wrote, in order to the making the Knowledge and Usefulness of this Plant more universal.

Time of
sowing.

The Seed is to be sown about the latter End of *April*, or Beginning of *May*, pretty thin, because it produces a great many large Leaves; and about a Fortnight or three Weeks before *Michaelmas*, all the Stalks and Leaves are to be cut down, and then cover the Bed again with long dry Dung, or Straw-Screens, so close that the Frost may not come at it; by which Means the new Leaves that spring forth will grow of a whitish-yellow Colour, and tender.

It would seem a little strange that this Plant should be no more used, were it not that Celery, its near Relation, is so great a Rival to it; but it has this to recommend it before Celery, that it partakes of almost all the good Qualities of Celery, and will, by the Treatment before mentioned, last much longer before it runs to Seed; which may not be displeasing to those that love to eat blanched Sallads a good while in the Spring.

B O R E-

BORECOLE or **DANISH KELE**, on Account of its Hardiness, is by some preferred to Brocoli; as it is undoubtedly of the same Kind, so it is to be treated in the same Manner in all respects as Brocoli is, and in some hard Winters is to be preferred to it; and though perhaps not so gross and tender is full as sweet.

*Of Borecole
or Danish
Kele.*

I place the **COVES MURCIANUS** or **MURCIAN KELE**, in the Rear of those boiled and raw Sallads, in as much as it is by several Gentlemen, who have eaten it in *Portugal*, much sweeter than Brocoli itself; the Sprouts come out and form a Head like an open Collyflower, which are cut off and boiled as Brocoli Sprouts are; I had some of the Seeds this Year from the Reverend Mr *Sims*, Chaplain to the *British* Factory.

*Of the Coves
Murcianus or
Murcian Kele.*

In order to make a short Supplement to my *Practical Kitchen Gardener*, it will not be improper in this place, because I do not think of ever making any farther Additions to that Work, to say something of the most necessary and best *Ligumens* and Sallads, which have therein been slightly touched upon.

*Of several Li-
gumens and
small Sallads.*

The most useful **PEASE** are the *Barnes's*, or short early Hotspur, the long Hotspur, the *Essex* Roadings, for the first and last Crops; but for the Summer Crop, the Marrow Fat, *Spanish Mulatto*, *Dutch Admiral*, Blew Round-cival, or Union Pease, Nonparel or Nonsuch, &c.
The

*Of the best
Pease.*

The *Flanders* or *Barnes* Hotspur, for they are all one, have their last Name from one *Barnes* a Farmer somewhere about *Brentford* who greatly improved them, it is a hardy Pea, and is to be sow'd on sandy Land, under a warm Wall or Hedge, about the Middle or latter End of *October*, or Beginning of *November*, and must be often earthed up, and may be covered with clean Wheat Straw, to preserve them in frosty snowy Weather, a few Coal Ashes, or Sea Sand, or Clay Ashes, or Mr *Liveings's* Manure will help to preserve them.

A second sowing of long Hotspurs, and *Essex* Roadings, may be sown soon after *Christmas*, at farthest at *Candlemas*, and these will follow the first sowed early Hotspurs.

A third sowing of Pease, are the Marrow Fat, *Spanish Mulatto*, *Dutch Admirals*, Blew Rouncival, or Union Pease, and of the Nonparel or Nonsuch, which is a very large fine Kind of the *Spanish Mulatto*, and is about the Beginning or Middle of *March*; it is best to stick them in the Summer: A Gentleman near *Hammersmith* cuts the Marrow Fat off, and some serve the Union so, after he has eat the first Crop, and lets them spring again, they will, as he says, bear a second Crop, but this I have not seen myself.

Either of the two Hotspurs, or *Essex* Roothing, (not Reading, as by some falsely called) may be sowed about the Middle or latter End of *April*, or Beginning of *May*, for the last Crops, which will come in *September* and *October*, and part of *November*.

Of Beans.

The first sowing, about the middle or latter End of *October* or Beginning of *November*, is the Hotspur, of which there are two Kinds, tho' some

some make a third, which are the *Spanish* or *Portuguese*, and the *Venetian*, which having been planted often in those hot Countries grow small, and consequently being impregnated with fiery Particles, come in earlier than Beans often planted in this cold Climate.

The *Venetian* Kind, I have within these two Years had from a Captain who came from thence, they come in quicker than the *Spanish* or *Portuguese*, but if suffered to stand till they are Old, are apt to eat bitterish, which is also the Fault of the *Spanish* and *Portuguese* Beans.

The Beans for the main Crop, are the *Sandwich* and *broad Stoker*; but the first is by much the best, tho' the latter are better Bearers, and so the most useful in all great Families. The *Windsor* Bean is raised on the soft rich Lands, about that Place and *Eaton*, from whence I procure my Seed.

Windsor.

I shall finish this Account with some of those Salladings or CABBAGE LETTICES, which are the best and most in Use; the first of which, I mean the common Cabbage, I need say nothing off. The others, which are the hardiest and best Kinds, both for Summer and Winter, are the *Brown Dutch*, which is a white Seed, and the *Genoese*, *Black Spanish*, or *Capuchin* Lettice (for it goes by all those Names), being a black Seed both which are like the common Cabbage, and differ only in their Colour, the one of which is a reddish brown Colour, the other a blackish one; and those two Lettices, as they are very hardy in Winter, so they are not so apt to run to Seed in the Summer as the *Turkey* Lettices (otherwise more valuable) are apt to do,

Of Cabbage Lettices.

do, and are therefore more useful for Soops, &c. as well as for the Use of a large Family; these are to be sown at *Michaelmas*, *Candlemas*, and *Lady-Day*, and about the Beginning of *June*.

The *Silesia* Lettice, has long been in Vogue, but has lost its Ground, since the *Turkey* Lettice took Place; but there is a little hardy Kind which is called the *Winter Silesia*, very valuable for its Hardiness in standing the Winter, it is to be sowed about *Michaelmas*, *Candlemas*, and *Lady-Day*.

The next and best Lettices of all are the imperial, and white or yellow, and dark green *Cos* Lettices, which sowed at *Michaelmas* and carefully preserved under Glasses all the Winter, make a most excellent Sallad, especially the last, being a little helped by tying in *April* and *May*, and by after Sowings all the Summer, but if not planted in the Summer in shade, are too apt to run to Seed.

The white or yellow *Cos*, which is also called the *Brasil*, *Versailles*, &c. on account of some extraordinary good Seed, which has some Years been brought from thence, is of a foreign Extraction, deriving its Name from *Cos* or *Cous*, one of the Islands of the *Archipelago*, and not from the Island *Corfica*, as some erroneously imagine it is; it is the sweetest and most crisp of all the Lettices; but the right kind is not known to all who deal in Seeds. But the dark green, which comes also from the same Place, being a black Seed, like the *Capuchin* is more generally known, especially amongst the *Turkey* Merchants, than the other is, as are also the *Imperial*, *Roman*, and curl'd Lettices; the first of which would be a valuable Lettice were it not rival'd by the *Brasil* or *Cos*.

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I shall finish this Account of Sal-
ladings, with a short one of RA-
DISHES, of which there are three Of Radishes.
Kinds, in Summer Use, (*viz.*) The
Sandwich or common Radish, of which little need
be said; the short Topt or *London* Radish being
the more valuable; and the *Batavia* or Turnep
Radish, the Seed of which we have from *Holland*,
is the best and most valuable of all.

This last kind is very good, both to eat raw,
and in Soops as you do small Turneps, if the
Gardener be watchful and not suffer them to grow
too large and sticky; it is a pity it is so often
mistook, or rather mix'd with the white *Spanish*,
which is not so good a Radish. It may be sown
once in ten or fifteen Days, as other Radishes are,
but the chief time of sowing it is *February* or
March, and if in Summer, they ought to be sown
on a North Wall in the Shade; how they will do
when sown at *Michaelmas* amongst Carrots,
Onions, &c. as the other Radishes are, I cannot
say.

I should have observed in the Account before
given, that when you sow or plant out Lettices
in the Winter or Spring, it ought to be on Ridges
or Hills, under some warm Southern Wall; but
if for Summer, in shallow Trenches almost as
you do for Celery, which Rules, if well observed
in all or most other parts of Gardening, would
be of great Use; the one to throw off all super-
fluous Moisture, and the other to retain it,
Mr *Liveings's* Manure, burnt Clay, Sea Sand, or
Coal Ashes, do also well if mixed amongst large
Lettices in the Winter, to preserve them from
Frosts and Vermin.

As to the raising of *Brocoli*; this Winter has
taught me, that there should be a second sowing
E about

about the Beginning of *June*, which in good Grounds will grow strong, and come in well after *Christmas*; and I find this last sowing will stand the Winter better than the first, which was sown the latter End of *April*. Note also, that the *Brocoli* is to be peel'd, and boil'd as *Asparagus* is, which peeling may be either done when it is parboil'd, or while it is green, at either of which Times it will strip off in the nature of *Lupines*, and when green the knotty Parts may be pared off. *Cato* one of the most celebrated Writers on *Husbandry* and *Gardening* among the *Romans*, (who, as appears by his Introduction, took the model of his Precepts from the *Greeks*) in his excellent Treatise *De Re Rusticâ*, has given so great an Encomium on the Excellence and Uses of this good Plant, not only as to its Goodness in eating, but also in Physick and Pharmacy; that makes it esteemed one of the best Plants either the Field or Garden produces.

And thus I have, as near as I can, set down all that is necessary to the raising and propagating some foreign Sallads in greater Perfection than they used to be.

CHAP II.

Of the LA LUCERNE, St FOYNE, REYGRE, CLOVER, TREFOYLE or NONSUCH, and other Seeds for the Improvement of Land.

HAVING, during the short Time I have kept a Seed-Shop in *Westminster-Hall*, been asked a great many Questions about Seeds for the Improvement of Land; that is, of the Quantity proper

proper to be sown on an Acre, and of the Soil proper for each particular kind of Seed ; I thought proper to add as concise an Account as I could in this little Time procure, of what is necessary on this Subject, especially since the Season for sowing them is now expiring, and many of the Nobility and Gentry making their Retreat into the Country, about their innocent and pleasant Affairs there.

The LA LUCERNE is a Grass that, amongst others, I have had the most Questions ask'd about ; and the Enquiries I have made after the Soil and Culture it requires, have been attended with some Difficulty ; some affirming that it loves a poor Land, others a rich, and a third, equally sagacious, that it will not do in *England* at all, nor is it worth our sowing.

*Of the La
Lucerne.*

If we consult Modern Authors, especially *Mortimer*, we shall find that they are almost silent as to *La Lucerne* : It was a Grass little known to those who first introduc'd the Art of Husbandry into *England*. Mr *Turner*, in his printed Account of Grass-Seeds, says of it, that it is an excellent Fodder, and, by some, preferred before *Saint Foyne*, as being very advantageous to any dry or barren Ground : Some say it requires a moist and rich Soil ; and others, a dry one ; from whence he concludes, that it has proved well in all. But Mr *Mortimer* seems to desire to be excused from any Account at all of it, when he says, that the Seed coming from *France* in the War-Time, had prevented its being so much propagated, as otherwise it would have been ; and therefore, that he could not find such Observations made about it as might be expected.

To all which in general I answer, that in good Ground, which will bear Crops of a greater Kind, it is, perhaps, not worth the sowing, there being few Gentlemen that would lose Ground of 40 s. an Acre, for the sake of the best Grass-Seed that grows; but I must own I suspect, that the not growing, and even the not prospering of this Seed, is owing to the Negligence and Laziness of the Husbandman, even in poor Lands, I mean, in their not Fallowing, or Ploughing and Harrowing their Lands three or four Times, and thereby reducing it to a fine Powder; since this, as well as the *Saint Foyne*, and most other Grass-Seeds, seem to affect the best Preparations you can make for them, I mean, as to the Fineness of the Ground, although it be poor, and then you may expect Success.

Since the Publication of the first and Second Edition of this Pamphlet, I have had the Opportunity of being informed, partly by Reading and partly by farther Accounts I have had from Gentlemen of great Veracity, in all that I think necessary to be known as to the Raising and Use of *Lucerne* or *Luzern*.

I shall pass by, at present, the Account published by several Authors of good Repute, relating to the Etymology and Derivation of this useful Plant, and of the Countries which seem to claim it as a Plant of their own; of this the *Spaniards*, as well as *French*, seem to glory; and shall only say of it, that it is certainly the Medick Fodder of the Ancients, being carried by the *Greeks*, after the Wars with *Darius*, into *Greece*, where they gave it the Name of the Country from whence they brought it; but that this Grass has its present Name from *Lucerne*, or *Luzerne*, one of the Cantons of *Switzerland*.

The Ground they chuse to sow it upon in *France*, as I find it in Monsieur *Pomet's* History of Drugs and curious Plants brought into that Kingdom, is a sandy springy Land, or such whereon the Water may be carried, as on Water-Meadows. And I have been told by a very curious Gentleman, that at or about Port *Mabon*, in the Island of *Minorca*, there is but one Farmer, of any Account, who sows this *Lucerne* to cut green, for the feeding of his Cattle, especially Cows and Horses, that his Ground is sandy, and that having the Opportunity of floating his *Lucerne* as soon as it is cut, it will be fit to mow again in fourteen or fifteen Days time; and that consequently he divides the Ground he sows with *Lucerne* into fourteen or fifteen Parts, which he cuts in their proper Order.

And this Account seems to agree with what the *French* and other Authors say upon this Head.

This also points out to us the Uses to be made of this Plant, (*viz.*) to cut green for the Use of our Horses and Cows, the last of which will give a good deal of Milk thereby, and this perhaps is a better way than to make it into Hay; but Cattle must not be suffered to go into it to feed because it is surfeiting; on which Account it is best either to cut it and give it to your Cattle, in Cribbs or Racks, or to set Hurdles a cross a small part of it at a Time in the Field, as is used in Turneps and other Fields, and when it is made into Hay, it is a good way to mix an equal quantity of common Meadow Hay, or Oat or Barley Straw with it, and when thus sparingly used, it is allowed by all that have seen or us'd it, a most excellent Fodder to fatten poor Cattle, or cure those which are sick, either green or in the Hay, which in hot Countries may well be mown five
or

or six times in a Year, and with us two or three times.

Certainly (as Admiral *Hughes* and others affirm) it is best to sow *Lucerne* on sandy Land, and if there is no Water, the Moistness of our Summers will be equivalent to it; whilst in Countries so hot as *Sicily*, *France*, or *Spain*, there is an absolute Necessity for such Refreshments.

The Rules for sowing it, either earlier or later as before prescribed, hold to be good, for the Reasons there alledged; but whether the sowing Peat-Ashes, Sea Sand, or Malt-Dust, as prescribed in the first and second Edition be right, I cannot well tell, a very ingenious Gentleman and Friend of mine seems to distrust it; the same Gentleman says, that in good Ground the Weeds are apt to grow up with it and confound it; so that he advises the sowing it in Drills, by which means the Weeds may be the easier cut up with the Hoe in earthing up the *Lucerne*.

A Physician of *Sussex* tells me, that in order to prepare and bring his Ground into a proper Tillage, he sowed it the Year before with Buck-Wheat, which he plowed in towards the latter End of the Year, and the next spring sow'd it with *Lucerne*, and had prodigious Success; and the same might be done with Turneps, Vetches, or Tills, which are great Melioraters and Enrichers of poor Land.

All that I can gather by way of Corollary is, that clayey Land will not answer any Gentleman's purpose to sow it with *Lucerne*, and I am well informed from Mr *Ray*, and some curious Gentlemen in *Wilts* and *Dorset*, who have try'd it very much, that it will not do well in their chalky stoney Ground; so that good red, or sandy Land of any kind, seems to be the most proper for it, the first perhaps is too good, but
of

of the last there is enough in many Parts of *England*.

It is a Seed that ought to be covered thin, nor need you plow the Ground above ten Inches deep. Tho' by the Length and Strength of the Root, which is large, and runs downward with a Tap-Root, as the Oak does, it requires as deep or deeper a Soil than any other Grass-Seeds do, and notwithstanding it be upon a Clay or a Rock, yet if there is a good depth of natural Mold (supposing two or three Foot), *Lucerne* will prosper very well.

Ten or twelve Pounds will be sufficient for an Acre, if good Ground; but 14, 15, or, 16, in poor Ground.

If you sow for a Continuance, then deep Soils tho' poor, say some, are the best, or if you sow to kill the Weeds; but if you sow only for a present Advantage, then any Land tho' ever so shallow will do, and the Improvement is as great as you can wish for, exceeding whatever you can expect from Vetches or Tares, when they are plowed.

I find that those Gentlemen, who have been so good as to give me their Opinions about *La Lucerne*, differ in their Accounts whether it is best to sow it alone, or with or after their Corn; because, say some, (especially in such a dripping Spring as this has been) the Grass-Seeds will spring up so fast as to choak the Corn. To this I answer, that as by the Directions before given, you are not to sow above two Thirds of the Crop of Corn you used otherwise to do; for Instance, instead of three Bushels, or three Bushels and an half of Barley, which used to be allowed in good, or four Bushels and an half, or five, which used to be sown in bad Ground, only two parts in three is to be sown; *i. e.* instead of three Bushels,
or

or three and an half, two or two and an half in rich Ground, or three and an half, or four in that which is poor.

So likewise, if you lay your Grafs-Seeds down with Oats, instead of six or seven Bushels to be allowed in poor, or four or five in rich Land, only four or five must be allowed in the first, and three and a half or four in the last ; to this I likewise add, that the Grafs-Seed, let it be which it will, must be sown as late as you can ; that is, if you sow the Barley or Oats the latter End of *March*, or Beginning of *April*, the Grafs-Seed should not be sown till the Beginning or Middle of *May* ; in short, when the Barley or Oats has gotten good Root ; but not burnish'd or spreading all over the Ground, then you may sow your Grafs-Seed, and Bush-harrow it over.

The Timorous will be, perhaps, afraid that such harrowing as we have been speaking of, will hurt the Corn ; but that is a great Mistake, since there is no one Culture that belongs to a Husbandman, which disposes Corn and all other Vegetables, in a Garden or elsewhere, more proper to make Corn bear well, than that Dislocation which is near a-kin to Transplantation ; for there are some, that in strong Lands draw great tin'd Harrows over their Corn in *January* or *February*, by way of Transplantation. But to proceed and finish ; as the Horse which draws the Bush-Harrow may be booted, as he is when you roll a Bowling-Green, it will prevent the Footsteps of the Horse spoiling the Corn.

My good natured Reader has been already told, that *Lucerne* will prosper best on moist deep Sands, and such as may be overflown ; an instance of which confirms what several Authors have wrote on this Subject, which is what a Gentleman near *Stratford-Bridge* in *Hampshire* affirms, who having
a Field

a Field of Oats amongst which he sowed his *Lucerne*, which was for the most part covered over by a large Flood, and in such a Manner, that the Oats, by the long standing of the Water were quite destroyed, yet the *Lucerne* was left alive, and prospered better there than on the higher part of the Field where the Water did not reach; and thus pointing out to Mankind that it is a Water Plant, gives a hint of its thriving well in the *Fenny*, and overflown parts of *Lincoln* and *Cambridgeshires*, where from the several concurring Circumstances of a deep rich watery Soil, it may reasonably be supposed it will thrive extreamly well.

The same Gentleman adds, that all the while he is possesst of his *Lucerne*, either in Grass or Hay, he never gives his Coach-Horses, which do his Husbandry Work, any Corn at all; that it tucks up his Horses Bellies, and does not blow them up as Clover does.

Farther also, this *Lucerne* may, with great Advantage, be sown on the sandy Lands which have a rich marly Bottom, as in *Lancashire* and *Cheshire*, which Sands are not of their own Accord apt to turn to green Sward; because the Roots will strike into the Marle, and take much stronger Root than when they grow on poorer Land.

Some of the former Editions of this Book intimate that *Lucerne* will destroy all Weeds; whereas in the last it is inserted, that Weeds will destroy it: But this is spoke in Relation to its different Ages and Growth, when *Lucerne* is young, and in Seed-Leaves, the Weeds, especially in rich Lands, are like to get the better of it, and should for that Reason be sown in Drills. But when *Lucerne* has got the better of Weeds, it will destroy whatever grows near it.

Of the Tre-
foyle or Non-
such.

The well-experienced Improvement of TREFOYLE, otherwise called *Nonsuch* Seed, and by some *Hop-Clover*, or *fine Clover*, (to use the Words of an eminent Dealer this Way) is, *First*, That it is a certain Rule, that all Lands naturally kind for Corn, and unkind for Grass, are undoubtedly kind for *Trefoyle*; and tho' it be so much impoverish'd by long sowing, that it will bear Corn no longer, yet such Land, being sown with *Trefoyle* Seed, will become worth 20s. or 30s. an Acre. As for the Soil in which it will grow, he tells us, (and so does Experience too) that even clayey stiff Ground, and especially chalky, rocky, and hilly Land, of a very small Value, may be improved as above. But if the Land be a Clay, then it must be laid as dry as you possibly can. The Pasture of *Trefoyle* is as good, and much better than any for Cattle, and especially for Cows; for it will not only cause them to give more Milk in Quantity, but also better in Quality, than other Grasses; and likewise make Butter and Cheese of a delicate yellow Colour; the Hay therefore is nourishing, and will make Oxen or any other Cattle, as fat as any other Hay, if it be mow'd and made in its Season, that is, whilst it is full of yellow Blossoms, and not over dry, (for 'tis soon made) it does not lose its Colour, nor shrink in the making, as Clover-Grass doth, but is much finer, greener, and, in all Points, better for Cattle than Clover is: It is very good for fattening of Ewes and Lambs, and all other Cattle, and free from breeding Rottenness, which other Pastures are apt to do: And whereas Clover-Grass doth daily make sick, and kill many Cattle, this is free from any such Danger; and

and Cattle are so sensible of it, that they will not willingly feed on the Clover, until they have eat the *Trefoye* to the very Earth, as may be soon seen, if one half of the Field be sown with one, and the other with the other; therefore if you are resolved to sow Clover, the safest way is to mix one half of *Trefoye* with it. In comparison to Clover, *Trefoye* will endure much the longest if it stand not to Seed; for that is destructive to the Root, and the Sap is gone which should nourish it, (because it must not be cut late, and in the Heat of Summer) always provided the Ground be sown with clean Seeds, and separated from the Husks wherein it grows; for if it be not, it will be impossible to cleanse it from the coarse and sower Grass, which mixes amongst it, and is so destructive to the *Trefoye*, that it will not last half so long; for as the coarse Grass increases every Year, so the other will every Year decrease. The next Year after the Crop of Corn is taken of, you may pasture or mow it, which you please; but if it stands till the Seed is ripe, the Hay is spoiled, and the Cattle will not eat it.

The Time and Manner of sowing it is when you sow Oats or Barley, which should be done after the following Manner; The Ground being sown and harrowed in with Corn, then sow the *Trefoye* Seed, and harrow it once in a Place, and then roll it, the Season being good, and the Weather kind. The proper Time of sowing is from the Middle of *March* to the latter End of *April*. An Acre requires 12 Pound, unless the Ground be very rough.

The only Soil (says my Relator) improper for this Grass is barren sandy Land, that will not bear Corn, and springy Ground; though I must confess I have seen them grow on both these Soils; but not so well as in chalky Hills, Stone-

Brash, &c. To proceed, there is a sort of Land viz. a barren, blackish Sand, or Hazle-Mold which is naturally kind for Corn, but being sown some Years, is inclined to a Couch-Grass, which is as destructive to it, as the other before mentioned is to *Trefoyle*, they being of a Quality much alike. Now where the Land is subject to this Grass, (as most light Hazle-Molds, &c. are) the best Way is to plough your Land three Times before it be sown; for this will not only destroy the Couch-Grass, but also all other Weeds, if it be mow'd; and being plow'd again, before the *Trefoyle* be decayed, and other Grasses take place, it will bear far better Corn than before; and afterwards will bear *Trefoyle* full as well.

What I have to add to this Account of *Trefoyle*, is, that it is one of the best Seeds to lay down your Fields with, (where the Soil is proper for it) Six Pound of this being mixed with one Bushel of Rye-Grass, or, which is better on all light Lands, the finest Seed well clean'd of the common Upland Meadow-Hay well chose, and such as is to be found in the Hay-Lofts of all Gentlemen's Stables, who keep fine Running-Horses or Hunters, and is indeed much better than Rye-Grass, which is generally used. This sowing of *Trefoyle*, or *fine Clover*, with Rye-Grass, or Upland Meadow Grass, is much used in some parts of *Hampshire* and *Wiltshire*, in stony stubborn Land, on which (tho' Corn grows well) few Grass-Seeds will.

It makes an excellent Fodder if cut soon enough, that is, before it grows bent and dry, on account of which they have a general Rule to cut it before *Midsummer*; and I have seen two Ton and a half, or three Ton, of Rye-Grass and fine Clover mixt together, in Ground that would carry neither *Lucerne* nor broad Clover, tho'

tho' in the Neighbourhood of it there has been indifferent good *French* Grass.

It is sown in the Spring with Barley or Oats, as other Grass-seeds are. This Method is also very proper for the sowing of Garden-Walks, because it comes up and burnishes quickly, and mows easy, and is so complaisant a Plant, as to give place to the Grass, as soon as that gets some head, tho' a small Quantity will still remain. All these kind of Grasses will grow exceeding fine (as will all manner of Turf-Grass Walks that are decaying) by sifting of Wood-Ashes very thinly over them. And thus much for fine *Trefoyle*, *Hop*, or *Fine Clover*.

Having in some other Places of this little Treatise, recommended the sowing even of *St. Foyne*, *Broad-Clover*, &c. on Wheat Lands as well as on those sown with Barley or Oats, according to the Nature of the Ground on which those Grains are sown, in this place I cannot but recommend the sowing of fine *Trefoyle*, mixt with some *Broad-Clover*, on rich moist Land, or with *Ryegrass*, on those which are spewy, amongst Horse-Beans, which will, when the Beards are taken away, make very good Herbage; and tho' it is to be plowed again the next Year, such Plowing in will be an Improvement the next Year, I wish I could say the same as to Pease Lands; but they lying flat, will, I doubt, spoil the Grass: In such a Case one or two Fluids of Seed is sufficient for an Acre, viz. 4 or 5 of *Trefoyle*, and 3 or 4 of *Broad-Clover*, and half a Bushel or three Pecks of *Rye-Grass*.

Notwithstanding what has been before set down in Opposition to *Clover*, and in behalf of the Comparison there is between that and

*Of the Dutch
or Broad Clo-
ver.*

the

the *Trefoyle*, the *Clover* is a very excellent and useful Grass, but requires a tolerable good Land, and prospers best in that which is rich, and light withal, where it will be a high Improvement, though the Ground were good and profitable before. It will also prosper and thrive on any Corn-Land well manur'd and soil'd, tho' it be a chalky Bottom, and a Soil which is of a clayey Nature, as a great Part of the Counties of *Hampshire* and *Wilts* are ; and it is well observed, that Land which is too rich for Corn, cannot be so for *Clover*, but very poor Lands are not fit for it, unless burnt or denshir'd, as most of the Down-Ground in the *West* Country is, and then the laying it down with *Clover* is a very excellent Way.

The Quantity of Seed for an Acre (if you sow it alone, and without Corn) is generally allow'd to be ten or twelve Pound ; but if you sow it with Corn, then four or five Pound is sufficient ; for if you sow more, and the Spring proves to be wet, then the *Clover* will get a head so much, as to spoil the Corn ; on which Account some do not sow the *Clover* Seed till the Corn is just coming up, and so harrow it with a Bush-Harrow.

The general way of sowing *Clover* for many Years has been either alone, or on Fields where Oats or Barley have been lately sown, and is just come up ; about the Beginning or Middle of *April*, or rather at such Time as the said Grains, or either of them have got pretty well rooted : But there is yet another Method of sowing of *Clover*, which I have seen practis'd about *Brumpton*, and other Parts of *Essex* and *Hertfordshire*, and that is on their Wheat Lands ; sometime after sowing, as above directed, on Barley and Oat Lands, and this sowing being performed eight or ten Days before *Michaelmas*, the *Clover* will be
so

so well rooted as to bear the Winter, and come strongly next Year.

Tho' there are others who with mere Caution, for fear of hard Frosts, defer the sowing their *Clover* on these Lands till towards the Spring, when their Wheat Lands are fed short by Sheep, Lambs, &c. then they sow about eight Pounds to an Acre, and just roll it in only, tho' in rank Ground a Bush-Harrow would do no hurt.

The Uses of *Clover* are so many, and so well known, that I need not repeat them; but there is one in particular that I think ought not to be omitted, and that is the Method they use in *Herefordshire*, Part of *Gloucestershire*, and *Wales*, where they let their young Shoots or Pigs run and graze; which causes the Shoots to grow lengthy and larger, and is the chief Magazine from whence all those Stores are brought, where-with all or most of the *West* Country Markets, as well as those at *Smithfield*, and other Parts of *London*, are stock'd.

Another great Use of *Clover*, is when a Man intends to improve his Land, without taking any Benefit of the *Clover* by Hay, and that is to sow some Land which is moderately poor with this Seed, with a View of plowing the *Clover* in and sowing it with Pease, Wheat, or any other Grain. In such a Case you should allow fifteen or sixteen Pound of Seed to an Acre; and as the Ground (though poor) is supposed to be in good Tillage, you may plow it about the Beginning of *August*, just before it comes to Seed; and this is as good or better than any Dunging; and besides, you may turn in some fattening Cattle to eat the Head of it.

I shall finish this Account of *Clover*, with a Story which is very remarkable. An honest Country Clergyman some Years since, who had a good
deal

deal of Glebe Lands in his Parish Fields, called his Parishioners together, and invited them into the Project of sowing four or five Pound of *Clover* Seed in every Acre of Barley or Oats they were to sow that Year, tho' now they sow six, seven, or eight, according to the Poverty or Richness of the Soil. In order to have some *Clover* in their Fields that Autumn, (and next Year when it was to lie unsown) for the feeding their Sheep; but his Parishioners being unwilling to do what neither their Fathers nor Fore-fathers had ever done before them, refused; on which Account their reverend Pastor was obliged to sow his own Ground by himself, the Effect whereof was, that all the Sheep fed no where but upon the Parson's Glebe, and so by consequence improved it so much more, than that which belonged to his Neighbours; that, whether they would or no, they were obliged to come into the same Measures the next Year.

The next Seed in Course shall be the RYE-GRASS, a kind of Food, which when young, as in the Spring, is proper for the fattening of Horses, or large Beasts, and is of very great Advantage for Milch-Cows, in that it causes abundance of Milk, making excellent Butter and Cheese, and is of great service for Ewes and Lambs, or to feed any larger Cattle in those early Seasons of the Year, especially if the Spring be warm, and the Wet does not lie too long, and before *Clover*, and other Grasses come in, it being more quick than them; for in hot Weather, such as the Months of *June*, *July*, and *August*, it grows harsh and dry, and is fit for nothing.

As for the Soil, clayey, and other sowre and uncultivated Land, is proper for it; nor does it

it take up so much Tillage as other Grass-seeds do, growing well amongst the most stubborn Clods that lie in the Way; on which Account, where any Gentleman has any cold Land, it can't be better employed than in such a Way, it being always observable, that those Lands which are not fit for *Clover*, *St Foyne*, *Trefoye*, or any other Grass-seeds, may be much improv'd by *Rye-Grass*; it will last some Years; and what is of great Moment, the feeding of Cattle is of great Advantage to it, because it will in the Spring sustain double the Quantity that other Lands will do, Acre for Acre; but then it is of no manner of service in the Autumn, except it be a very drippy one, or for Hay.

The Hay it makes is very sweet, and by some accounted better than that which is got in Meadows, especially if mowed while green and tender; it ought to be hained the latter End of *March*, or the Beginning of *April*, if you intend it for Hay; but be sure you take all the Advantage you can of the spring it makes in *February* and *March*, which is of more Advantage for the feeding of Ewes and Lambs or Milch Cattle, when there is no other Grass, than the Hay itself.

There are two Seasons of sowing this *Rye-Grass*, which vary according to the Uses to which you put your Ground; if you sow Wheat, and the nature of your Soil be so wet and cold, that it will not make any Sward, then you are to throw in about three Pecks, or one Bushel to an Acre amongst your Grain, sowing it upon the Furrow after your Corn is harrowed in, and give it a harrowing, with the back of a Harrow, or of one made of Bushes tied on fast to it.

If you desire to renovate and improve it, when in Decay, it can't be better done than by spreading of Street or Pond Dirt and Lime mixed

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together,

together, though either separately will do; the Nature of this Grass only requiring that the Composition which is spread over it be enriching and strong.

It being sown in Autumn, will be fit to graze the next Year with Horses, and other black Cattle, when it may be fed as close as possible; but the great Value of Rye-Grass is its coming so early in the Spring, viz. in *March*, *April*, and *May*, for the Use of all sorts of Cattle, who are then greedy of any thing which eats tender; and such is the Advantage of it, that you may feed it sooner in the Spring, than you can do any other Grass, without danger of making it bleed.

Upon the whole, tho' Rye-Grass is an Herb proper to be sown upon cold, coarse, spewy, austere Ground only, yet I have been often sorry to see it admitted into Lands, which are warmer, and consequently of too great a Value for it; for whoever would lay down any Land that is tolerably good, cannot do it better than with the common Hay-Seed, which comes from the finest upland Meadow-Land, and a proportionable Quantity of Trefoyle, or Nonfuch, mixed with it, of which much has been said already, under the Head of Trefoyle.

If this Seed be sown on Land entirely devoted to it, and on which, in all Probability, no Corn, (at least but little) will grow, then two Bushels is the least that can be sown there.

This Grass, if it be sown by itself or with Corn, and suffered to be hained and cut for Hay, must be cut before *Midsummer*, as was directed in the Article of fine Trefoyle or Nonfuch mixt.

The Improvements which have been within this twenty or thirty Years last past made in *England*, are very well worth taking notice of; since by it there are Precedents, in several Places, of Ground which was not originally worth above a Crown or ten Shillings an Acre, which has been improved to twenty or thirty, and sometimes more.

*Of the St
Foyne, or
French Grass.*

The Land (tho' very poor and barren) which it chiefly affects, is, such as has underneath it, at about six or eight Inches, or a Foot, deep at most, a rocky shelly Ground, either of Stone or Chalk, wherein the Roots may run down and expatiate themselves with Pleasure; for in rich Lands, or in hard Gravels, where there are no such Rocks, the Roots have not room to run down, and so it will either burn away, or the Weeds will destroy it. 'Tis on these Lands it prospers the best; the Roots (tho' some deny that Part of the Position) being very long, and running so deep that they are not so soon dry'd up by the parching Heat of the Sun, as all other Grasses are; and this is the Reason why in the hottest Summers we have *Saint Foyne* that will look green and flourishing, whilst other Grasses, as *Trefoyle*, *Clover*, and *Rye-Grass* in particular, are in a Manner burnt up; all this we have from Experience in the several Counties of *Oxford*, *Gloucester*, *Hants*, *Wilts*, and *Dorsetshire*, where this useful Grass is raising in great Abundance, on Lands of different Contextures, and different Bottoms of shelly Rock, Chalk, &c.

It must (says a judicious Seedsman) be sown in great Quantities, because the Seed is large and light, either with Barly or Oats, the Ground being made extreamly fine, by plowing of it two

or three Times, and giving it the large tin'd Harrow as oft ; for in this Preparation it is, next the Goodness of the Seed, that the success of this, and I may add most other Grass-Seeds, consists : But you must remember not to sow your Corn too thick, viz. not above two Thirds of what you would otherwise allow ; some there are who say, that you need not fear sowing these Seeds too thick, for being so, they sooner stock the Ground, and destroy all other Grasses and Weeds. Mr *Turner* says, that the Quantity of *Saint Foyne* is four Bushels to an Acre ; but I am told by a Gentleman in *Dorsetshire*, who has a good deal of it, that on their poor Lands they allow six or seven Bushels ; the poorer their Ground is, I suppose, the more Seed they allow, there being on the Top of many rocky, chalky Grounds, different Degrees of Soils, as there are on gravelly and other Bottoms.

The general Method of sowing *Saint Foyne* on Lands which are proper for it, has been either by itself, or with, or rather after, Barley, Oats, &c. but of late Years, and which is, I humbly conceive, one of the newest and best Pieces of Husbandry in Mr *Liveings's* System, is the sowing this Seed after Wheat, by which means there is no time lost in the Improvement of your Land, and on the Chalky Lands about *Maidston* in *Kent* ; where it has been (as I am informed by a Noble Lord who lives in that Neighbourhood) sown a great while ; it endures the severest Winters very well, tho' there are some who defer the sowing of this Seed, as well as *Clover*, till Spring, for the Reasons mentioned in the Article of *Clover*.

I have not as yet met with any Experiments, which have been made to push the *Saint Foyne* on, whilst it is as yet young and tender, and just as it is coming up, but undoubtedly on all Lands
that

that are very barren, such adventitious Assistances must have a considerable Effect. If therefore, the Place you live in affords you either Sea-Sand, or Malt-Dust, Ashes made of Peat, Wood, Straw, Furze, or Bracain, or any other calcin'd Material, if duly and carefully applied, and not in too great Quantities, I believe you need not fear Success.

But this I say not from Experience, but Conjecture, for some ingenious Gentlemen are of another Opinion, and think that the sowing of any of those calcin'd Ashes will destroy rather than forward those Seeds, especially whilst they are young.

This nevertheless does not entirely deter me from that way of thinking. I am sure in all sorts of Corn-Land they are exceeding good, and except it be Peat-Ashes a small Quantity may be used, even on the tenderest Grasses; however, it will be of great service to it when growing old, as the next Paragraph but one explains.

The greatest Care that is to be taken, is the not feeding this and other Grasses at all the first Year, nor very early in the Spring the second, because it will be apt to bleed itself to Death: for the Sweetness thereof is such, that it will provoke the Cattle to bite it too near the Ground.

And the Noble Lord, whom I have just now mentioned, very much decries the letting in great Flocks of Sheep to feed on it at any Time; because, he says, that they not only bite too close, but also taint the Grass in such a Manner as to weaken and destroy it; and this his Lordship observes to be an Error much committed in the *West of England*; when you would therefore feed such Lands where *Saint Foyne* is sown, both on Account of your Cattle as well as the long lasting and success of Grass-Seed, but a few Cattle should
be

be put in at a Time, and those prevented from running all over and tainting your Grass, especially in the Spring.

It will last fifteen or twenty Years very well ; but when it comes to be old, *i. e.* past ten or twelve Years, or sometimes sooner, you must now and then, once in three or four Years, lay a new dunging in the Winter, or in the Spring sow some of the Ashes, I shall next give an Account of, to give it new Life and Vigour.

Of several Things to be sowed, or spread over Grass.

Having in several Parts of this Account of the Improvements of Land by Grass-Seed of divers Kinds, made mention of Ashes and Earths to sow or spread over what Fields you have of that kind, that I may make it the more compleat, I have drawn up what follows :

For *Nonfuch* or *Trefoyle*, about ten or twelve Bushels of Wood or Kiln-Ashes, sown by Hand out of a Seedlip. But if you want to help it after it has been sown some Years, fifteen or sixteen Bushels is the least you can use.

Ryegrass seldom wants any Assistance till after it has been sown a Year or two ; but when it does, you may allow twenty or thirty Load of the Shovellings of Streets, or Earth dug out of the Highways, and mix'd with ten or fifteen Load of Dung, and five or six of Sea-Sand, Lime, or Coal-Ashes ; and this is indeed a solid Improvement for any of the Grasses before mentioned. To this may be added, three or four Load of Pigeon's-Dung, tho' some there are that use that Dung by itself ; but it is in my Opinion to fiery to use alone ; besides, it is a very difficult matter

to get Quantities enough of it, to improve the many Acres of Grass which are now sown.

In *Berkshire* they have an Improvement for some Seeds, used just as the Seed is coming up, which is made of the Peat that is dug out of low morassy Ground and burnt, the Ashes of which they say contain a great deal of Salt, and is of a wonderful fertilizing Nature: They allow fourteen Bushels to an Acre, and sow it by hand out of the Seedlip, and observe it does well on Pease; but as for other Grain, they say it does Injury, by causing the same to run too much to Haulm. But as this may be a Fault owing to the Quantity rather than Quality of the Ashes, I cannot see why a more moderate Use of it may not be well, in any Improvements of this kind.

*Of Peat-
Ashes.*

The use of Lime, Sea Sand, Rags, Shells, and other Improvements of that kind, are so well known, as not to need any Explanation at present; nor have I now Time to show how much these and all the other Improvements beforementioned will contribute to the bettering of poor Land, if applied duly and in proper Quantities.

But the last Account I shall give, (which is, I think, the cheapest and easiest to be come at) is an Improvement made by the burning of Clay; the first Experiment of which was made, as I am told, by the present Right Honourable the Earl of *Hallifax*, and is much practised in *Suffex*; from some Gentlemen of which County I have had the greatest part of the following Account.

*Of the Im-
provement of
Land by burn-
ing Clay.*

The reddest strongest Clays are the best for that Purpose (better than either blues or whites)
and

and contain in them very great Quantities of Salts when calcin'd and burnt ; and in the doing this (if I may use so mean an Expression) they kill two Birds with one stone ; for in the first Place they dig out their Clay, (which that County much abounds in) to make their Fish-Ponds ; and in the second Place, they burn their Clay to Ashes ; which is the Improvement I am here speaking of, and their Method of burning it, is what now follows.

I need not tell (common Reason dictating so much) that this burning of Clay ought to be done in the Summer Time, and in the driest Weather, tho' it may not be improper to have the Place where your Fire is made, a little out of the Sun, that the superior Force of one may not extinguish the other.

When you have got about six or eight Load of Clay cut into Spits, about as thick as a Brick, let it be pretty well dried by the Sun, and having made a Heap of Fern, Straw, Furze, small Bavin-Faggots, Billets, Coal, or other Combustibles, laid one upon another in a proper Order, about as big as a little Bonfire, in the Form of a Pyramid, bring the Spits of Clay, and lay them round the same, two or three Spits thick, leaving only Room to put in the Fire, and then light the Heap. The Clay by the innate Heat of the Wood, &c. within, will soon take Fire, and as it advances outwards, still lay on more Spits of Clay, placing them in such an Order, that the Fire may be pent up within the Heap, and never suffered to go out, for if you do that, your Labour will be all lost, and you must begin again.

After you have burnt up your six or eight Loads of Clay, which is a little dry, the Heat which is within will be so great that it will fire any Thing, and then you may lay on the Clay
green

undoubted Fidelity and Experience in *Sussex*, where this Method of burning of Clay has been more used than any where. One of whom is a Baronet of a considerable Figure and Genius in that County, who was not only one of the first, but one (as he himself has told me) that has done more at it than any Body in all that County, that he had found it had done extreamly well on his Corn-Land, being much preferable to Lime; but that he could not say such great things of it, as to its Effects on Meadow-Land, but that he had tried another Experiment of that kind in Meadow-Land, which was full of Ant or Mole-Hills, which he had plowed with a Mole-Hill Plow, and had burnt the Hills to Ashes, which he had spread all over his Ground, and had had Crops of Grass of five or six Tun on an Acre, or more, to the Amazement of every body that saw it, and that four or five Years successively.

And this would be a good Intimation to all those Gentlemen whose Estates have been neglected, one of which I myself have this Year seen in *Dorsetshire*, where there is Land worth 20 s. or 30 s. an Acre, now let for not above 2 s. 6 d. or 3 s.

This Intimation has set a Friend of mine in *Wilts* to work, who having some Ground lying near a Coppice, which was not a strong Land, and the outside thereof full of Hills, all which my Friend (by my Advice) has plowed up and burnt, not without a modest Assurance of making great Improvements on his Wheat-Land which lies just by.

Since the Publication of the first Edition of this Pamphlet, I have been told, that the Method that Noble Lord, who is said to be the first Invention of burning of Clay, uses, is not in a Pyramid

Pyramid or Heap, but in a Ridge, just as Tan-
ners Bark is piled up in a Coppice when it is
for Sale, keeping (as I suppose) a hollow Funnel,
or Tunnel, in the middle to draw the Air. But
for the real Method take the following Account,
said to be taken from his Lordship's own Hand-
Writing, in a Letter sent to a Peer of North-
Britain.

The Method of *Burning Clay*, by a Noble Lord.

ANY sort of Clay will do, but the stronger it is
the better, and the stronger the Ground is the
more proper for this Manure, and it is more proper
for Clay than Sand, because it is a very hot thing.
A Load of Turf burns five Hundred or a Thousand
Clods of Clay in one Heap. The Turf is but com-
mon Dirt, dry'd and set on fire with Straw or Sha-
vings. The driest Time in Summer is the properest
to burn it in; whenever your Turf is ready you lay
on a Heap of Clay to cover it quite up, and it will
immediately turn to Ashes; and when the Fire is like
to break out you may lay on more Clay, and so on till
you have either what you want, or the Fire happens
to go out, and then you must make a fresh Heap, and
you must bring the Turf to the place you dig the Clay,
because the Violence of the Fire will soon set. You
lay the Ashes upon the Grass-Ground, either Mea-
dow or Pasture, about ten or twenty Loads to an
Acre; the best Time is when the Hay is just led off.
You take about twenty Loads to an Acre of plow'd
Ground, and after it is laid on prepare it for any
kind of Grain you think most proper, or for Potatoes,
Turneps, or any other kind of Roots. It is likewise
very proper for cold, barren, channel Ground, &c.

This is a true Copy of that Noble Lord's
Letter, who was said to be the first Inventer of

this useful Improvement, as it was communicated to a Peer of *North-Britain*; but whether his Lordship's Instructions were too concise, or such as the Persons, to whose Conduct this Affair was committed, did not understand, they found the Directions (as they say) were deficient, and would not do, for that when the Fire was lighted and had burnt some time, and the Turf and Straw consumed to Ashes in the inside, the Heap would tumble down and put the Fire out, at least smother it so that it would not burn; and this put them upon trying another Experiment which answered their Expectation.

They erected a little Kiln of about five Foot Diameter at Bottom, and about six or seven high, drawing it towards a Pyramid which remain'd about two Foot wide, the Figure whereof might be, from thence called the Frustrum of a Cone, or Pyramid; this Pyramid was set either in ordinary coarse Mortar, (or with Bricks with no Mortar at all in the Joints) but if in coarse Mortar, there must be Holes for the Fire to break through and set the Materials (which are to be piled up round it) on Fire.

To render this small Kiln or Pyramid the more effectual, they made several Tunnels upon the Ground, about a Foot or a Foot and half square, which corresponded with the Bottom of the broken Pyramid, and were used as so many Holes to draw in the Air, and keep the Materials, which were piled up round the Pyramid always lighted; if by any chance (as extream Wet, or the like) the Fire should go out, it might be renewed again, by putting Straw, Moss, and other Combustibles down the hollow of the broken Pyramid, and thrusting the same up thro' the Tunnels, and by re-lighting the Fire towards the Wind, might set the Heap on Fire again.

I have

I have already remarked, that in the new Improvement of this broken Pyramid or Kiln, the Tunnels were made to run square on the sides of the broken Pyramid: But I have thought of another Invention which I think, much exceeds the former, and that is, the running the Tunnels Radius ways, (*Vid. the Plate following, Fig. 1.*) by which means, if the Fire should go out it might the more easily be lighted, by putting in the Fire exactly at that Quarter where the Wind sits.

The Figure (to which there is also a Scale put) is upon the first Inspection demonstrative of its Uses; I only add, that at Top there should be put three or four very large Tyles, or Slabs of flat Stone, loose, cross ways, to depress or keep down the Heat, and leave room for the Smoke to evaporate; these large Tyles or Slabs of flat Stone, should be loose that you may take them off, upon any occasion when you renew your Fire, by putting in Straw, Moss, Stubble, &c. and then laid on again.

The Structure of your Kiln being made, and the Uses of it well understood, we come now to the piling up and disposal of the Clay which you are to burn, which, as has been elsewhere hinted, should have been laid a drying some time before; and having filled the hollow broken Pyramid with Straw, Moss, Stubble, small Faggot-Wood, and the like, and having also stufft all the Tunnels leading to the Bottom of that Pyramid full also, with Combustibles of the like Nature, but not too hard, you are then to begin piling up your Clay and other Materials, which are to be burnt in the following Manner: Let the first Layer next the broken Pyramid be Straw, Stubble, Fern, and Furze, either separate or mixt together, set round, if you please, with small Bavinny-Wood, made of Brambles, Black or
White-

White-Thorn, or whatever small loose Stuff you can get, and on that begin your first Laying of Turfs dug up in thin Spits, like Brick, and prepared as before set down; then lay another Row of the same Combustibles as were before mentioned, and another Layer of Turfs thicker than the former, and then the Fire may be put to, and new Layers all of Clay put on as the Fire advances; the chief Difficulty is the coming at the Heap to lay on the Materials as the Heap increases, which is remedy'd by a Tripes, the Legs whereof should be about ten Foot long, and fastened at Top by a Pin, which Tripes may be expanded as the Heap grows wider at Bottom.

The Pyramid and Tunnels are either made of Brick or Stone, without any Mortar at all, or at least that there should be a great many Openings or Joints left, thro' which the Ashes may fall, that would otherwise increase so much as to suffocate and smother the Fire; the Persons who attend it, called Stokers, should be provided with Rakes or Scrapers, such as Bakers or Brewers use when they draw their Ashes out, and clean their Ovens and under their Furnaces, with which Rake or Scraper the Ashes may be pulled out and the Tunnels kept open, so that the Air may have its free Force, and keep the Fire always alive; and by this means the Heap also will not grow so very wide, as to be troublesome to those that pile on new Layers of Clay.

I should also have noted, that between every Layer of Clay there may be some few of the Materials, I have before recounted, put on. Every body that is acquainted with Husbandry knows the Advantage there is in all Ashes that come from Malt and other Kilns on Meadow and Corn-Land, when spread on by itself, but when
mixt

mixt with these Clay-Ashes, what is there that an industrious Farmer may not expect.

Before you begin burning, you are to go not only into the Field, and collect all the Stubble you can, but you are to go into the Common, and collect what Fern, Furze, or other Combustibles are to be met with; and also into the Woods, where you may scrape up large Quantities of long Grass, Moss, and the like, all which will not only set and keep the Clay on Fire, but will also be of itself an excellent profitable Manure when mixt with these; the last of which is, when burnt (tho' at present the least known) one of the best Improvements on Grass and Corn-Lands that is now used in Husbandry.

To conclude; I know it is in burning of Clay, as in all new Undertakings and Improvements of this kind, what with the Novelty of the Subject, the seeming Difficulty there is in the Execution, and the not understanding or knowing the Success of it, joined to a natural Laziness and Distrust of every thing of this kind, which neither our Vathers or Vorevathers ever did before, that this new and very useful Improvement may meet with little regard in its first setting out. Tho' the Success that it has met with, in Countries where it has been some Time used, will, 'tis hoped, prevail and get the better of all these Prejudices, and make it one of the most useful, as it is indeed the cheapest, of all Improvements. An ordinary Load of Lime, of four Quarters or Thirty two Bushels, will cost at least Twelve or Thirteen Shillings; but as the Expence of this consists only in Attendance, and by setting Fire to it is itself its own Executioner; I cannot see how a Load of this can cost above One, but if it should be two or three Shillings,

lings, it must certainly pay very well; since it is, by all Gentlemen who have tried it, allow'd to be much better than Lime, and to go farther. Add to all, the useful Amusement and Diversion that there is in all Employs of this kind.



AN EXPLANATION of the References to the Plan and View of the new-invented Kiln for *burning of Clay.*

A *The Hollow of the broken Pyramid, or Kiln.*

BBBBBBBBB *Eight Tunnels leading into it.*

CCCCCCCCC *The Divisions where the Clay and other Materials are plac'd.*

DDD *The Tunnels where the Fire is lighted.*

E *The Upright of the Frustum or broken Pyramid.*

FFFFFFFFF *The Tunnels through which the Air draws to keep the Fire lighted.*

N. B. *There may be two or three Tunnels next the Wind lighted at one Time.*

Fig. 2

Fronting the end

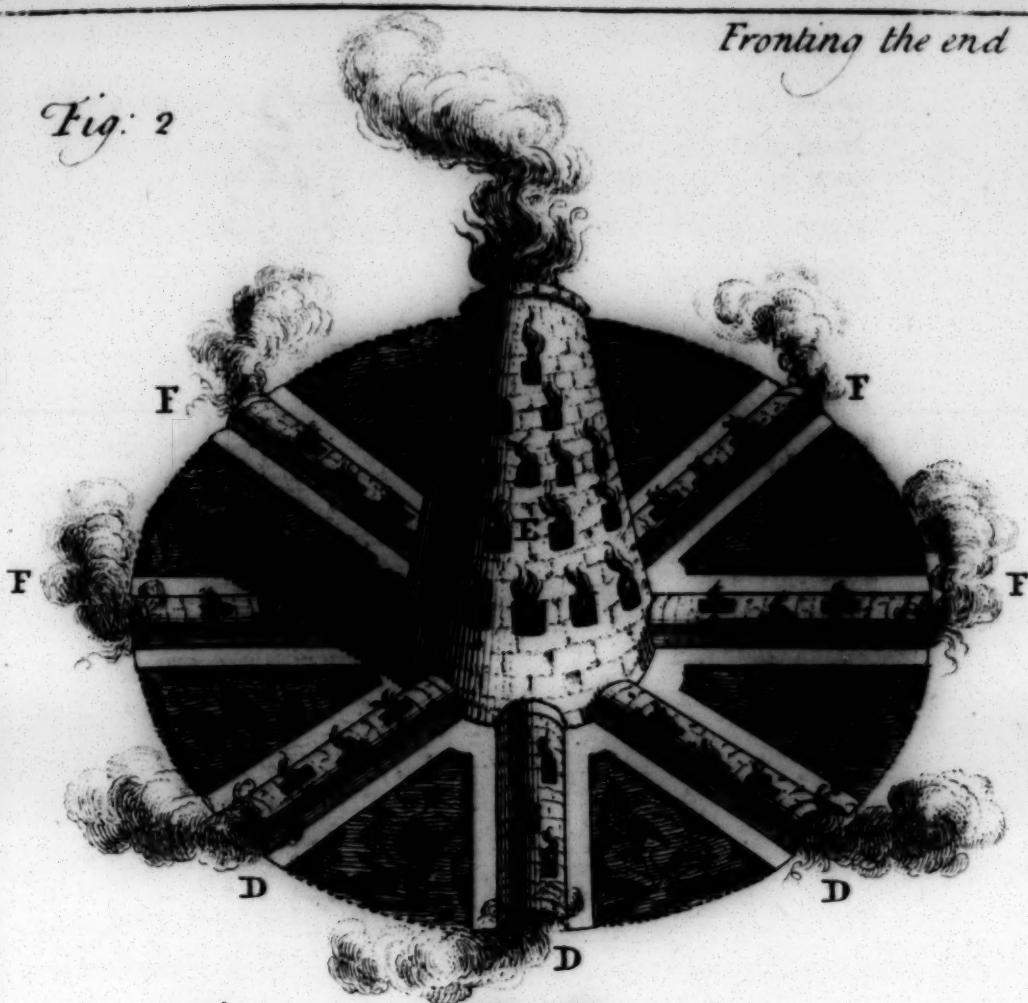
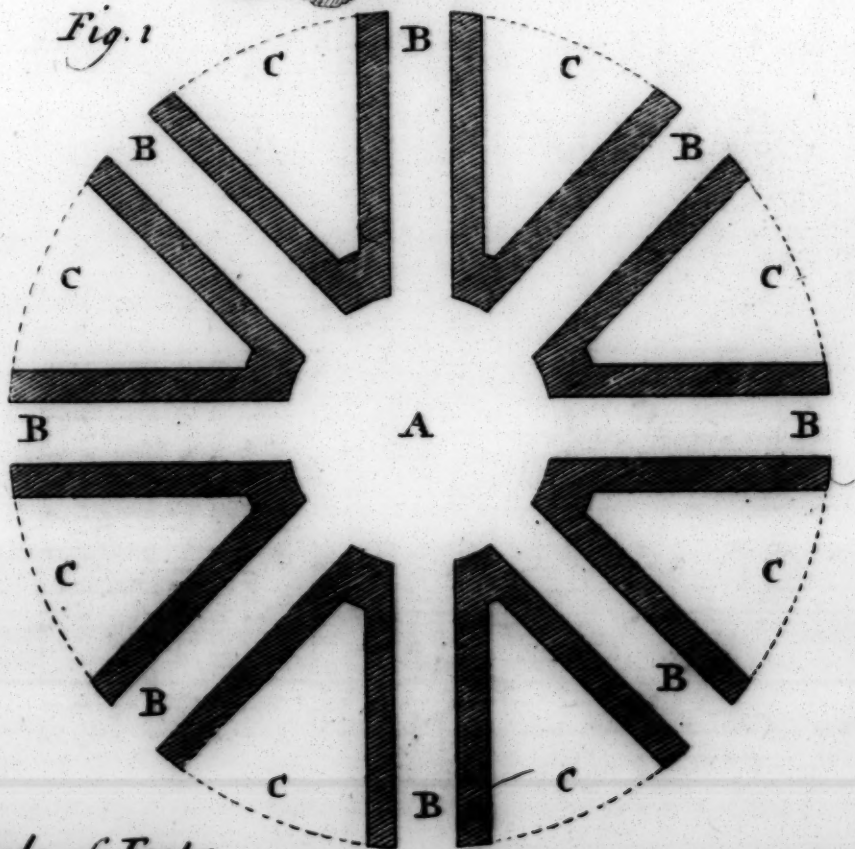
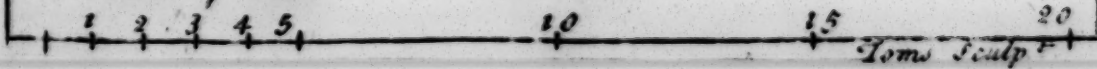


Fig. 1



A Scale of Feet



Lately Publish'd,

In Two Volumes Quarto, Adorned with Sixty Copper Plates,

AN INTRODUCTION to a General SYSTEM of HYDROSTATICKS and HYDRAULICKS, Philosophical and Practical. Wherein the most reasonable Methods of RAISING Water, for the watering NOBLEMENS BUILDINGS, GARDENS, &c. are carefully laid down. Containing in general, A Physico-mechanical Enquiry into the Original and Rise of SPRINGS, and of all the Hypotheses relating thereto; as also the Principles of WATER-WORKS, and the DRAUGHTS and DESCRIPTIONS of the best ENGINES for RAISING and DISTRIBUTING WATER, for the Supply of Country Seats, Cities, Towns Corporate, and the like. Deduced from the Theory of ARCHIMEDES, GALILEO, TORRICELLI, BOYLE, WALLIS, PLOT, HOOE, MARRIOTTE, DESAGULIERS, DERHAM, HAWKSBEЕ, and others. Reduced to Practice by Vitruvius, Bockler, De Caus, and other Architects among the Antient Romans, Italians, French, Flemings, and Dutch; and much improved by later Practice and Experience. Illustrated and Explained by above sixty Copper Cuts, done by the best Hands, of the Principles which tend to the Explanation of the whole, and of rural Grotesque, and cheap Designs for RESERVOIRS, CATARACTS and CASCADES of WATER, CANALS, BASONS, FOUNTAINS, and GROTTO WORKS, few of which have been ever yet made publick. By STEPHEN SWITZER.

Printed for THOMAS ASTLEY, at the *Rose* in *St Paul's Church-Yard*.

A DISSERTATION

On the T R U E C Y T H I S U S Of the A N C I E N T S.

Proving that the
Medicago or *Cythisus Maranthæ*
(Not the *Bastard Sena*, as asserted by a late Author)
Is the Plant that was held in so great Esteem among
the R O M A N S.

Also that it may be successfully made Use of
for the I M P R O V E M E N T of the most dry,
barren, hilly Land, as L U C E R N E has been
for that which is moister and nearer a Level;
and in every respect answer the Excellent Cha-
racter given of it by *Columella*, *Pliny*, *Virgil*, &c.

In a Letter to a Nobleman, who favour'd this Enquiry.

To which is added,
An Account of the G R E A T P R O F I T S which
arise (if carefully managed) from sowing the L U C E R N E and
B U R N I N G of C L A Y, the bad Success of which in some few
Places may be entirely attributed to the Unskilfulness of those ap-
pointed to manage it.

Also a C A T A L O G U E of the *Best Seeds*, the Season of sowing them,
and the Time of their Perfection.

By S T E P H E N S W I T Z E R.

*Cythisus omni generi pecudum utilissimus est, quod ex eo citò pinguescunt,
& lactis plurimum præbet ovibus—* Columell. de Re Rustica.

*Non ex alio pabulo lactis major copia aut melior, super omnia pecorum
utilissimus a morbis omni usu præstante—* Plinii Hist. Nat.

Sic Cythiso pastæ discentent ubera Vaccæ. VIRGIL.

L O N D O N: Printed for THOMAS ASTLEY, at the
Rose in St Paul's Church-Yard. 1731. [Price 1 s. 6 d.]

*A Farther ACCOUNT of the
best Method of Burning of Clay;
as Communicated to the Author, by a
Worthy and Honourable Gentleman of
North Britain.*

THAT I might make this Tract as complete as possible, before Gentlemen depart into the Country about the great Affair of Improving Lands; I humbly conceive it will not be unnecessary, by way of Introduction to this most useful Improvment, to premise, that the Gentleman who has been so good as to favour me with the following Account, and the Observations he has made on that Head as to it's Uses and Improvements in Husbandry, having read the former Editions of the *Compendious Method, &c.* out of a generous and kind Concern for the Publick Good, did (though a Stranger) call upon me at *Westminster-Hall*; and signify, in a very obliging Manner, his Readiness of communicating what he had observed in this useful Method of burning Clay; which I must own exceeds all the Methods I ever yet saw publish'd by myself or others (especially as to it's Ease and Dispatch in burning, and the great Quantities that may be produced thereby) as much more in Proportion (and for the same Reason) as the burning of Bricks in a Clamp, does that of a Kiln.

Having the following Plan in your Hand, or being well vers'd in the Dimensions of it, the first thing to done is a Delineation of the Place where the bottom Walls and Tunnels are to

run; and if it be a green Sward take off the Top of it, where the Tunnels are to be, six Inches wide and six deep, and with that Turf you may begin your cross and end Walls, which are first of all to be carried up as upright as you can, three Foot high; leaving the side Walls undone till last of all, and till you see which way the Wind will fit to light the Combustibles, which must be laid on to the best Advantage; for in this first setting Fire to the Heap, consists the Success of the whole Affair.

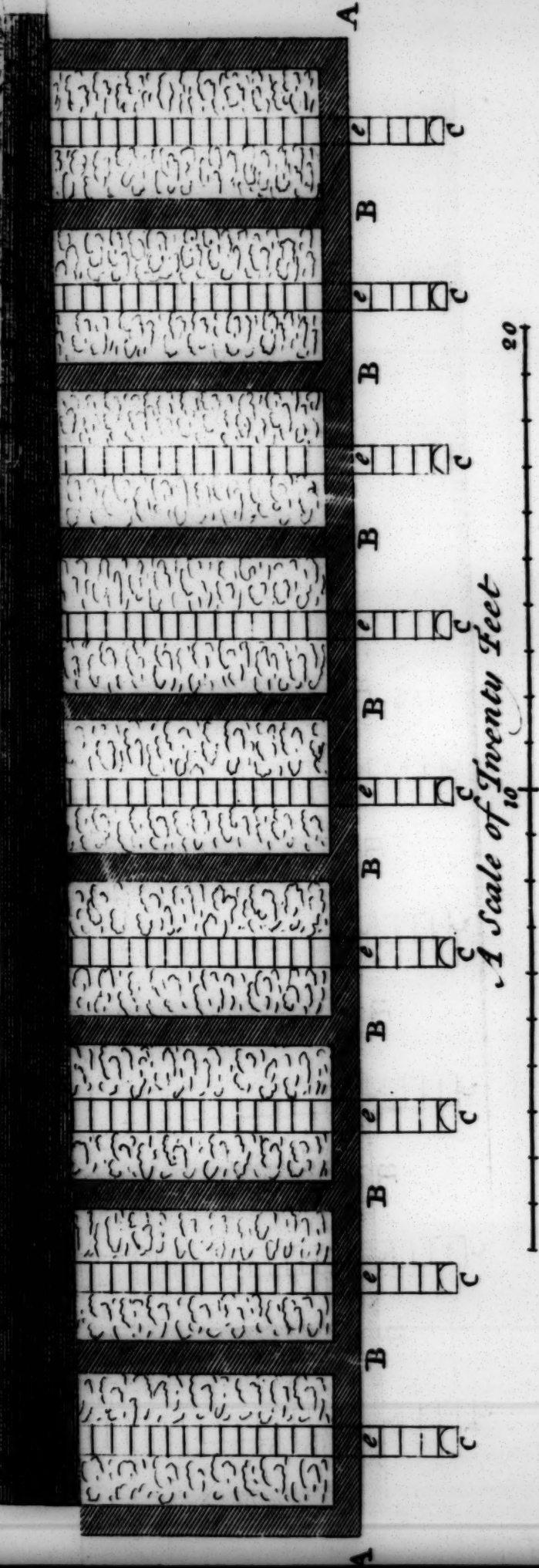
The Uses of these Tunnels thro', or rather under, the Clamp, are to draw the Air so as to forward the first kindling; and these Tunnels are to be covered over with Flags, or flat Stones, Slates, Bricks, or Tiles, set as near together as you can, to keep the Ashes from tumbling thro' and choaking the Tunnels up; and it must be noted, that these Tunnels need not be brought up with Stones or Brick on the Sides, as Drains are, which lessens the Expence that would otherwise attend this Work.

The Turfs of which the end and cross Walls (as well as those on each side) are to be made, must be twelve or fourteen Inches long, six or eight wide, and four or five thick; and the green Sward turn'd downwards as in common banking, and the middle or top Walls are to be as upright as you can, but the Side ones a little sloping or like a Batten.

The Plan of the Clamp, with the side and end Walls, cross Walls, and Tunnels, (the first of which are mark'd upon the Plan, (*Vid. Plate II. Fig. 1.*) at the Corners with A A A A. The second are the cross Walls, B B B, &c. and the Tunnels which project some two or three Foot beyond the Side of the Clamp are mark'd C C C C and e e e e e e, which are the Places where the side Walls

Plate 2.

Fig. 2.



A Plan and upright of a Clamp or Kiln for burning of Clay

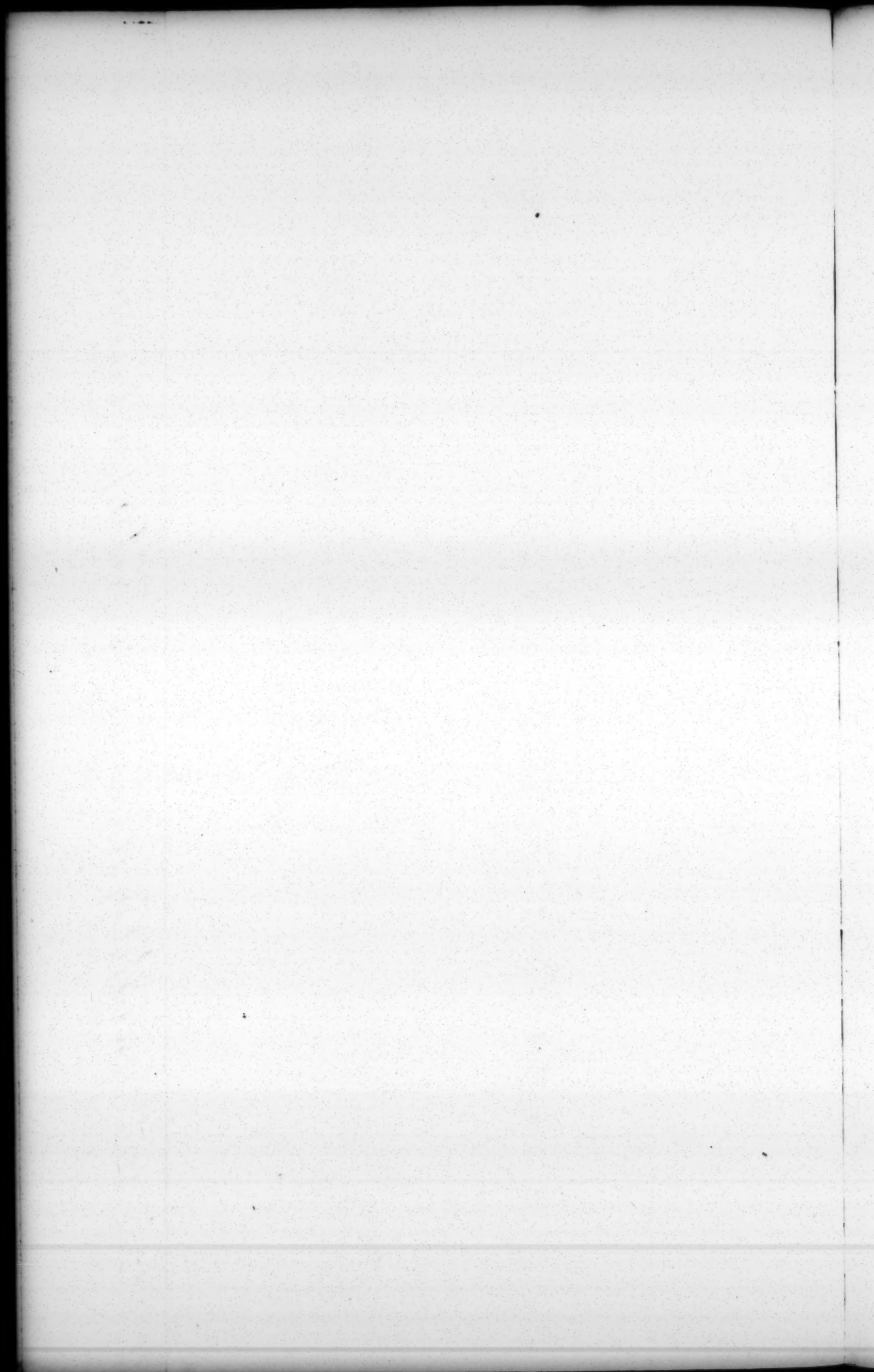
run; and if it be a green Sward take off the Top of it, where the Tunnels are to be, six Inches wide and six deep, and with that Turf you may begin your cross and end Walls, which are first of all to be carried up as upright as you can, three Foot high; leaving the side Walls undone till last of all, and till you see which way the Wind will fit to light the Combustibles, which must be laid on to the best Advantage; for in this first setting Fire to the Heap, consists the Success of the whole Affair.

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Walls



Walls are carried over the ends of the Tunnels) being thus laid out, the Tunnels dug under Ground, and the cross and end Walls rais'd three Foot high as before; the Combustibles, consisting of old Thatch, dry Straw, Fern or Brakes, Furze Bushes, Brambles, Bavinny or Brush-Wood, hard Faggots, Moore or Heath'd Peat, or Turf, Coal, hard Wood, &c. placed between each Wall at DDDD, the lightest Materials below, and those which are heavier towards the top; and when the Combustibles before mentioned are laid on, one upon another, in the manner aforesaid, and upon that about four Inches of dry'd Clay; that side Wall which is opposite to the Wind must be raised next, to the three Foot high, leaving the other side open till the Fire is well lighted, which will soon be done, by applying it to the bottom of the Combustibles. And when the Materials and cross Walls (which were before directed to be raised, with the dry Clay which is above) are well lighted, then you may raise up that side of the Clamp which lies farthest off from the Wind with Turfs, as the end and other side Wall were, to the height of three Foot.

This being done the wet Clay is to be brought and laid *Stratum super Stratum* leisurely and by degrees, as you perceive them to be lighted, one above another; raising up the side and end Walls with them, to compress or keep in the Heat; but the cross Walls are not to be continued any higher than the three Foot first mention'd, their use being chiefly the first lighting of the Fire.

It is to be observ'd, that this Method of *burning of Clay* in a Clamp, requires much less Attendance, than the Kiln of any kind does; for the Fire being once well lighted will (by the help of the Air that draws thro' the Tunnels under the Heap mark'd CCC, &c.) keep always in, notwithstanding

withstanding any Rains that may happen, even tho' the Work should be deferred till *September*, which often proves a rainy Month; and from the Accounts I have receiv'd from this honourable Gentleman, I am almost sanguine enough to think that nothing less than a Deluge can put it out; however, it will be proper to make the Clamp on some rising advanc'd Ground, to prevent the worst that can happen.

The Width of the Clamp is but about fifteen or sixteen Feet, that the Labourers, which throw up the Clay on each side, may do it with more Ease. And for the same Reason it ought not to be raised above eight or ten Feet high, because it is impossible for them to cast it higher without Scaffolds, &c. which is troublesome; but may be continued to what length the Owner pleases, (even to one hundred or one thousand Foot long, in the same manner as before directed) according to the Quantity of Ashes the Husbandman wants, or the Quantity of Clay he has to burn. And thus far as to the preparing the Clamp and lighting the Fire.

But there is yet more to be observ'd, as to the Nature of the Clay when it is burnt, and the Uses to which it is put in Husbandry and Gardening, for it must needs be very useful in both Places.

The Person then who has thus burnt his Clay, ought not to be concerned when he finds, after all his Labour, that the Clay is lumpy, or hardish as Bricks are, when they first come out of the Clamp; because this happens to all Clay which is strong, though strong Clay is better than that which is softer.

When your Clamp is burnt sufficiently, you are to carry the dry'd Bricks on and spread them over your Ground, allowing about sixty or seventy

venty Load (I mean such as are drawn by three Horses) to an Acre; for the kind Author of these Additions justly observes, that all our *English* Allowances on this Head are too little; but this should be applied according to the Nature of the Ground whether very cold and clayish, or middling.

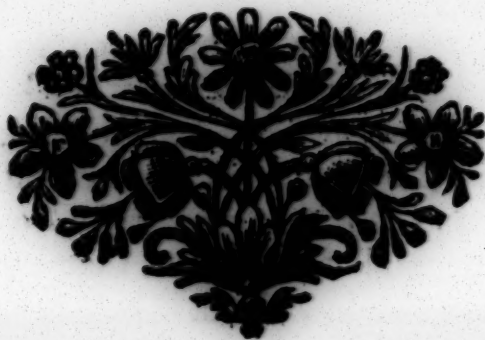
For burnt Clay, like all other Manures of this kind, is of no great effect in light Lands; so that if to Lands very cold or clayey you allow sixty or seventy Load, to that which is less cold forty or fifty will do.

When the Clay Bricks are spread over the Ground, they will dissolve by the Winter's Frosts; but if any of them remain till the Spring undissolv'd, they are then to be beat in pieces with a clotting Mall or Mallet; and after that you are to take a short tin'd strong Iron Harrow, and harrow the Pieces about so as to distribute them the more equally; and after all you are to draw a large Roller over them, which will break them to pieces yet more, and this rolling will be also of great Advantage to all Meadow-Land, not only in the pressing out the Footsteps of the Cattle which feed upon it, but also to fasten the Roots of the Grass, and make the Surface of the Ground the smoother.

The Gentleman who has been so kind as to communicate this tells me, that he has not try'd the Experiment on Corn-Lands enough to make any certain Conjecture as to the Effects it will have thereon; but that on Grass-Grounds he had try'd it, with all the Success that could be expected, or even imagined. For having a Mind to compare it with Pigeon-Dung, Soot, Stable-Dung, &c. tho' they all advanc'd the growth of the Grass in a great Degree; yet none of them produc'd so good or so lasting a Grass as Clay.

Clay-Ashes did ; so sweet that the Cattle would chuse to abide and feed upon it, much rather than on any of the other, and would endeavour to bite it, not only to, but even under the Ground ; and that this Manure will not only destroy all Moss and Spike, or one-pointed sowre Grass, but also introduces that which is more sweet and luscious, and tho' it does not cost so much as Lime by a great deal, yet it will have as good an Effect and the Grass will be sweeter.

One particular improvement he has told me, with which I shall conclude this Account of burnt Clay ; That Lands which by neglect or a wrong Method of Tillage were reduc'd to the utmost Poverty imaginable, so as for many Years to produce little or nothing at all that was good ; yet by plowing it twice or thrice, and spreading these Ashes over it, it produced an excellent Crop of Turneps, and so he supposed it would have done of Buck-Wheat or any other preparative Improver of Land which may afterwards be sow'd with Wheat or any other more valuable Grain.



To the BOOKSELLER.

Westminster
July 1. 1730.

S I R,

AS it will undoubtedly be expected that, in the new Edition you are preparing of my Pamphlet, that I should give (amongst other things) an Account of the Success of the Experiment of Burning of Clay; I write this to you before I go out of Town, but wish that I had had more Time to do it; because I might then have seen more Men and more Places where it has actually been put in Practice. But as I am inform'd by you, that the fourth Edition is quite disposed of, and that there is still a great Call for them; I think it proper to give the best Account I can tho' not so good as I would of the Success of it. In the first Place, I must acquaint you that I have received Letters from my Friend Mr *Knowlton*, out of the North, and from several of my Correspondents in other Places, which give an Account that they are almost every where burning of Clay after the Methods directed in this Tract with great Success. But the Particulars they do not mention.

I was yesterday to take a View of what that noble Peer of the first Rank is doing of this kind about ten or twelve Miles from *London*, of which I made mention to you when we met last; and find that he has (it being now the second or third Year since his Grace began the Tryal) three or four Clamps, if not more, at work in several parts of his Estate, having this last Year manur'd a large Grass Field or two, with good Success, and his Grace's Continuance of the Experiment in so

K

many

many Places, is, I think, an undoubted Argument that he is satisfied with the Use and Success of it, tho' there was no body at home who had been actually employ'd in the Affair, from whom I could collect that certain and particular Account which I could wish to have had; nor do I think that the Method they pursue, is so exactly agreeable to the Rules laid down by Col. C——t, nor that the Clay thereabouts is so fit for the Purpose as it is in other Places.

From the best Inquiry I could make, I found (contrary to what has been suggested by some) that the strongest Clays are the best for this Purpose, as containing a greater Quantity of Salts than other Clays, since it is plain, from what I could here collect, that some of their strongest Clays will liquidate and turn into Lumps, like the Refuse or Dross of Glass, upon the first Approach of Heat, and will not dissolve by any means, and that all very strong Clays contain more or less of these drossy Parts.

It is brought as a considerable Argument against what my good Friend the Colonel asserts, that Dung will cause Grass to grow as fast as burnt Clay will, but that it is not (as no body pretends to deny) so sweet, or that the Grass, and consequently the Hay, is sweeter and better from Clay-Ashes than Dung; but supposing it true that Dung is as cheap, and will improve Grass and other Ground as much, and to as good a Purpose as burnt Clay does; there are some Places where Dung cannot by any means be procured to improve half the Quantity of Ground that a Farmer has, on which account they are forced to have recourse to Sea-Sand, Marle, Chalk, Lime, Pond Earth, &c. such as they can procure best to make up the Quantity they want to improve every Part of their Farm. But then

two or three of these kinds of Improvements are not to be met with in all Places, and I can mention two, *viz.* Sea-Sand and Marle, that are not to be had within twenty or thirty Miles of above two thirds of this Kingdom, tho' they are the best and most natural Helps that can be procured either for Land which is wet, cold, and poor, or hot and sandy; for Lime, which is the easiest to be had of any other Manure, is well known to be a Cooler and Consolidator of Land, (tho' sometimes us'd by Mistake on those which are cold and clayey) so that in some midland Counties 'tis very certain that there can be no Improvement procur'd either so good or so cheap, for cold spewy Lands, as burnt Clay is.

I was indeed a little surpriz'd to find that the Persons with whom I convers'd on this Subject, should intimate that the Expences attending the burning of Clay should be 3 *s.* 6 *d.* *per* Load; when I was assured by my worthy Friend and Correspondent, that it might be done a great deal cheaper, even for 4 *d.* or 6 *d.* *per* Load at most; but this must needs be owing either to the dearth of the Combustibles, (some of which may also possibly take their March a different Way than to the Clamp) or to an old and well known Truth, that no body pays so dear for their Improvements as Great Men do; so that I am not at all doubtful but this is a mistaken Account.

There are still those to be found who, being averse to all new Improvements, endeavour without any just Knowledge of the Value of the Experiment, to decry this useful Improvement (which I will not absolutely take upon me, till farther Tryal, to vindicate) yet from what I have said before, as well as from the Possibility there is of farther advancing the Uses and Improvements of it; I will take upon me to say, that there is no-

thing but is very agreeable to Reason in the whole Scheme before laid down, provided it be pursued with Regularity and Attention, the two great Instruments, by which all Improvements are brought to Perfection, and for want of which the best Inventions are laid by as useless, and not worth Notice.

As to the Uses of burnt Clay that has been already hinted at, and, I think, made plain, and the Methods by which that Burning is accomplish'd, in Kilns or Clamps, are as obvious as any Thing in Nature, to those who ever saw the burning of Bricks this Way, provided the Bottom Tunnels and Foundations are well laid.

The putting of Small-Coal, or any other Combustible between each Laying of Clay, as they do between those of Brick, are evidently known, when well and carefully perform'd, to produce the same Effect: And it is well known that Bricks, even after the Clay has been well temper'd, often come out samell'd or half burnt; how much more then must Clay come out so, that has not been temper'd at all; nor is it difficult to imagine, even tho' it had never been actually and experimentally seen, how that a Hill or Mole, well lighted at first, should heat to such a Degree, as to dry and burn all above, tho' green and wet, if laid on discretionally, and by Degrees; and Heath, Fern, Goss, Small-Coal Dust, &c. are so easily to be procur'd in most Countries, that the Difficulties cannot be as the Opposers to this Scheme would fain have it.

To conclude; notwithstanding the Opposition it has met with, from the Sloth and Ignorance of some, and the Conceit and Ill-will of others, I hope, as near as I can guess, from the great Experiments which are now making, to be able, after my Return from the long Journey I am
going

going, to give you such a farther Account of it, as will make this Improvement what I have always (out of Regard to the publick Good) wish'd it should be, one of the cheapest and most useful, that this or any other Age has produc'd: But if there should be any Obstacles that should put a Stop to it (the Experiment not having been either expensive or dangerous) we shall, I doubt not, meet with the Approbation of all virtuous good Men, who don't judge of Things from their Event, but as they were justly intended for the Benefit of Mankind.

I am Yours,

STEPHEN SWITZER.

P O S T S C R I P T.

I am very sure that if it be manag'd well, that this Manure can't cost more than 12 *d.* or 18 *d.* a Load. I observe, that even in *England*, the going out of the Fire in some Places, proceeds from the Negligence of the Workmen, who don't lay that good Foundation of Combustibles which are requir'd to continue the Fire: And because they don't make their Turf Walls round the same close enough to compass the Heat that ought to labour within. Every body that has observ'd any Thing of Brick Clamps, may observe how careful Brickmakers are in plaistering the Outside of their Clamps close with strong Clay, to keep in the Heat, and make it more useful, which ought also to be observ'd in this Work of burning Clay for the same Reasons.

Of



Of Mr. Liveings's Manure.

BEING willing to do every Thing in my Power to promote Husbandry, and to publish whatsoever tends thereto, that may be of Service to the Publick; I shall therefore add Mr. *Liveings's* Account of his *Compound Manure*, and several Letters giving an Account of the extraordinary Success thereof: which take as follow.

HIS Majesty has been graciously pleased to grant his ROYAL LETTERS PATENTS to *THOMAS LIVEINGS*, Gent. for the sole Making and Vending

An Artificial Compost or Compound
MANURE;

Sixteen Bushels of which mends an Acre, and is so adapted to Vegetation, that it enriches, mends, and improves, all Sorts of Land, tho' never so barren, and remains much longer in the Ground than any other Culture or Manure whatsoever. It destroys Grubs and Worms, Moss, Rushes, Sedge, &c. and causes the Meadow and Pasture Ground to bring forth a rich feeding Grass in great Plenty, and the plow'd Land to produce very great Crops of Grain of all Sorts, and preserves it from Smut; it kills Slugs and Snails,
and

and all those Insects which are bred (by Dung) and harbour in the Roots of young Plants, and eat the tender Fibres thereof, to the very great Prejudice of the Gardeners, who often lose all their Plants thereby, which would be intirely prevented by mixing the Earth with this Manure, which greatly increases the Growth of all Sorts of Herbs and Roots, and gives them a fine Relish; it makes the Vine and Fruit Trees bear abundance of very large Fruit of a fine Flavour; the Forest Trees thrive very fast, and the Hop-Vines flourish and yield a plentiful Crop, as hath been experienc'd by several Noblemen, Gentlemen, eminent Farmers, Gardeners, and others, in divers Parts of this Kingdom.

The proper Season for sowing this Manure *on Meadow and Pasture Ground* is any Time, the Grass being short; *on Arable Land* at Seed-Time; *on Garden and Turnip Ground* when the Seed is sown; and for Hops at dressing the Hills, according to the printed Directions which will be given at the following Places, where the said Manure is sold, for 2 s. and 6 d. per Bushel, viz. At *Woobourne* near *Marlow*, on the River *Thames*, *Bucks*; At *Capt. Whitaker's Wharf* at the *Three Cranes*, *London*; At the *Great Seed Shop* opposite to the *Common-Pleas Court Westminster-Hall*; At the *Wharf and Warehouse* near *Bow Bridge*, *Essex*; At the *Red-Lyon Inn* at *Henley* in *Oxfordshire*; At *Richard Frank's Wharf* at *Reading*; And at *Roger Mark's*, a Porter at the Wharf at *Newbury*, *Berks*.

Note, *To the End the said Thomas Liveings, his Executors, &c. may have and enjoy the full Benefit of his said Invention*, His MAJESTY, by his said LETTERS PATENTS doth require and strictly command all and every other Person and Persons, of what State, Quality, Degree, Name, or Condition

Condition soever they be, that neither they, or any of them, at any Time during the Continuance of the Term of 14 Years thereby granted, either directly or indirectly, do make the said Manure, or in any wise counterfeit, imitate, or resemble the same; nor shall make, or cause to be made any Addition thereunto, or Substraction from the same, without the Licence, Consent, or Agreement, of the said Thomas Liveings, his Executors, &c. first had and obtained in that Behalf, upon such Pains and Penalties as can and may be justly inflicted on such Offenders for the Contempt of his Royal Command; and further to be answerable to the said Thomas Liveings, his Executors, &c. according to Law.

*Newnham near Nettlebed,
Oxfordshire, July 24, 1730.*

S I R,

A Ccording to your Desire this comes to acquaint you that I sowed 8 Acres of Wheat Land with your Manure, and at the same Time dunged the rest of the Field very well; but your Manure has far exceeded the Dung, and produced a very great Crop, there being from 10 to 30 Stalks, with very large Ears, from one single Kernel; and it is so clear of Weeds, that I did not think fit to weed it. I also dressed about 6 Acres of Barley with your Manure, and it is the best Barley in all our Neighbourhood. I likewise mended about 4 Acres of Pease with it, and two Acres in the same Field with Pitch Marks, but yours so far exceeded it, that any one might see the Difference. I tried it also on some Oats, and it made them tiller so well, that some of them produced above 60 large Stalks from one single Grain: And I sowed it on about 6 Acres of Clover, and had three times as much
as

as I had from the other 6 Acres, which I did not dress with it ; and I believe I shall have two Load from an Acre of the latter Crop ; all the Land I sowed it on is a cold Clay, which is all the Account I can give you of it at present, and is what can be justified by a great many of the neighbouring Farmers who saw it as well as

Your humble Servant,

SAWRAY LOVEJOY.

S I R,

A Gentleman who has a plow'd Farm in his Hands here, sent down above 300 Bushels of Mr *Liveings's* Compound Manure, and we sowed most of it with his Barley, and some of it on green Sward, and as far as we can perceive it is like to do well, the Grain looking very healthful and the Grass a very great Crop; but our Dung was a great while at Sea, so it did not come hither till the latter end of *March*, which was too late by a Month, and then came a dry time so that the Land could not be plow'd or harrow'd as it ought. I am, Sir,

Oundle,
June 23. 1730.

Your Humble Servant,

ST. BRAMSTON.

S I R,

I Send these to let you know what Service your Manure has done the Ground I try'd it upon. About *August* last I sow'd about a Rood of Ground that was Grass, in proportion as was in your Directions, it was a gravelly Ground, and chiefly brought nothing but
L Malloes

Mallows and other Trash; but to my great Surprise, before *September* was out, I had a thick Clover Grass with white Honey-Suckles, and I put my Horse in to feed, and he kept always that Part close fed, and did not regard the other Part, tho' in appearance fit to mow, but was very coarse. About the Beginning of *December* my Man manured a Quantity of Ground, and set about a Peck of Beans call'd *Hotspurs*, but of the *Portugal* Sort, and when they came to grow in the Spring they exceeded their own kind so much that most of the Stalks were near 5 Foot high and as thick as a common walking Cane, and many Stalks had 100 Pods on each Stalk. And where my Man sow'd Pease with the Earth mixt with the Manure, it produc'd in its kind the like Effect both for Strength and Quantity, which was admirable when the little Addition is thought on. In the Spring there was some of the Manure put round the old Roots of the Artichoaks, and to each Slip, or Eye, that was set, about a Handful in a Hole, the Increase was so great and early as was never before in that Ground; and those Fruit-Trees that I mix'd some of the Manure with the Mould round the Trees to come at the Roots, bore Fruit in abundance, some that had not for near seven Years before; and I mixed some of the Manure with the Mould in the Orange-Cases, which made them blossom and bear Fruit in very great Quantities; and where it was put on the Ground to prevent the Worms and other Insects prejudicing the bulbous Roots of Flowers, it not only preserv'd them but made them grow much stronger both in Stalk and Blossom; the Ground that was mix'd where the Turnep-Seed was sown produc'd a fine Crop, and the Turneps were sweet and the Paring as thin as an Apple, this was sown but once, when divers of the Neighbours

Neighbours were obliged to sow three or four times the same Season, because they were devoured by the Flies. This Spring were set some Beans, only on a Gravel mixed with some Manure, which brought forth as good and large a Crop as if set in the deepest Mould. This I do assure you is real, and at present the only Account, which I hope will be satisfactory to you, and those Gentlemen you nam'd that did desire it from

Your Humble Servant

Poplar,
June 1. 1730.

SAM. TROWELL,

Note. The above genuine Letters, together with some of the Roots with above 60 large Stalks from one single Kernel, and above 150 Oats on a Stalk, may be seen by any body desiring the same, at Mr *Liveings's* Warehouse, near *Bow Bridge* in *Essex*. Where any one may likewise see the Effect of the said Manure on Grubbs, Worms, Sluggs, Snails, &c. which die the Minute they touch the least Dust thereof.

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